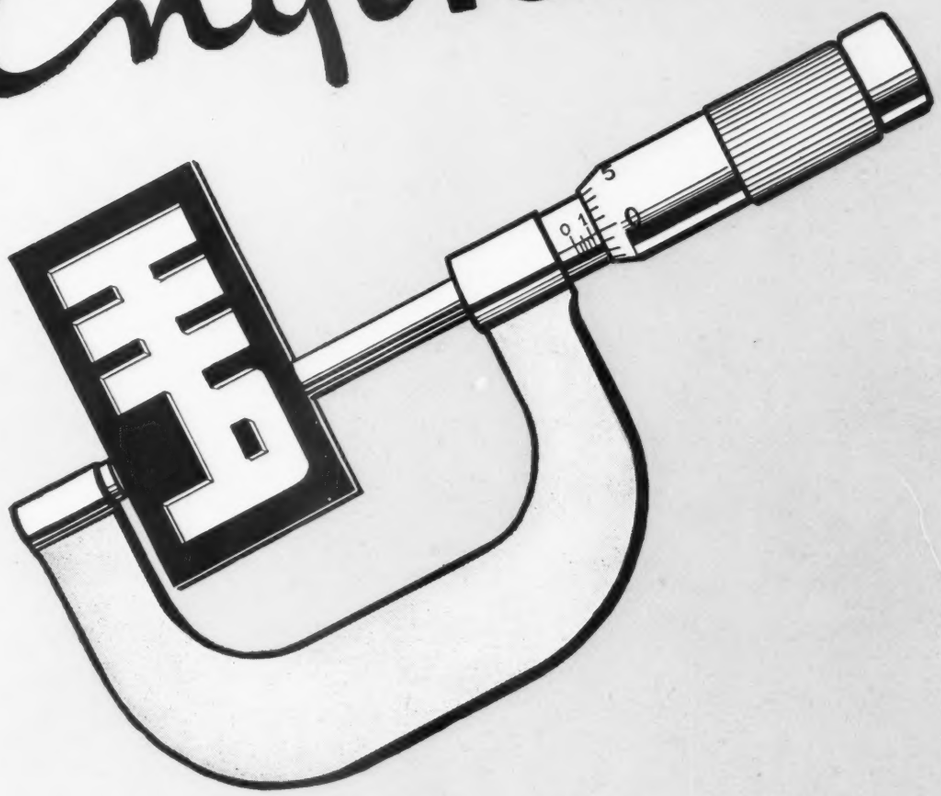
Printing Equipment Engineer



NOVEMBER, 1940

A TECHNICAL PUBLICATION FOR PRODUCTION AND MECHANICAL EXECUTIVES IN THE GRAPHIC ARTS INDUSTRY

823 would be a lot of people in a street car.

.823 would surely mean a miracle batter in any league.

82.3 would be a pretty good grade in History for Junior.

82.3 however, is a pretty low I.Q. (Intelligence Quotient)—in fact nearly feeble minded.

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*"*Ratios for Printing Management for the Year 1939"* published August, 1940, by the United Typothetæ of America, Washington, D.C.

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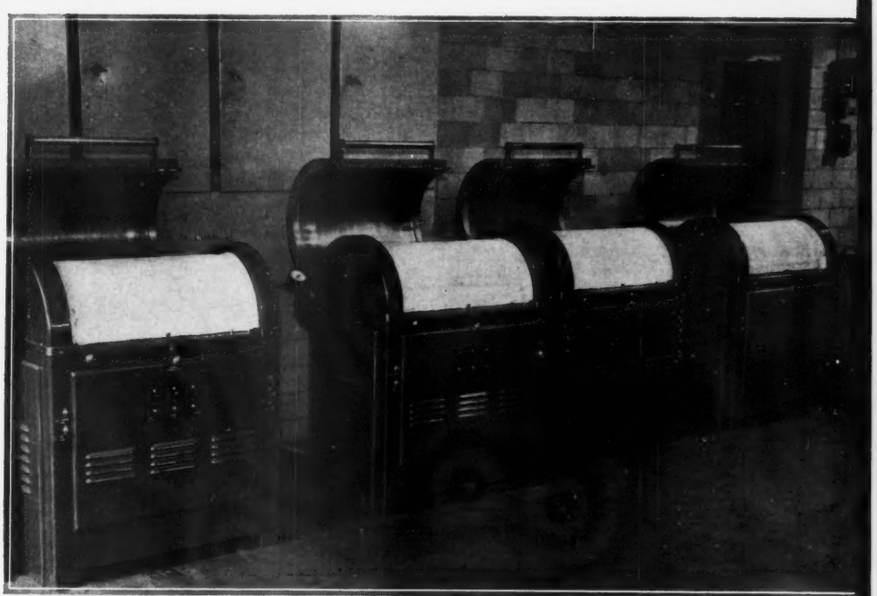

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"SINK-HOLE OF THE BUSINESS" *transformed into profitable department when young foreman cleans up obsolescent composing room, systematizes the work and provides essential materials at compositor's elbow*

By JOHN W. KNOX*

*Superintendent, The Caxton Company, Cleveland.

MANY printing plant and composing room executives might well learn a lesson from the experience of one plant in which the problem of halting the continuous drag on profits has been solved. This plant, like many others, had been assembled gradually from the miscellaneous equipment of competitors that had failed. It had operated on the rather commonly held theory that a type cabinet was a type cabinet and that the methods and details of composition had been learned and frozen into final perfect form a generation ago, that there was nothing new to learn about setting type and that all printers knew it was impossible to prevent compositors from having to hunt for things. When you were busy, all your materials got into forms. Everybody "picked" and forms became pied but they couldn't be distributed because they might be re-run.

This theory of the easy going has been rudely upset by a new foreman who, strange to say, grew up in this plant but whose naturally alert mind was not dulled by his experiences. What he saw he thought about and remedied as best he could as he progressed by stages from the devil sweeping floors and doing handy jobs to more responsible work.

Let's turn back the pages of time and look in to see what the old plant was like and how it was managed. It has many replicas that are unfortunately not yet history.

It did not take a practical eye to see the main features, disorder and confusion. Windows were covered with a grimy film which shut out about forty per cent of the daylight. Window sills were piled with cigar boxes, quarter-cases and what not. The outmoded stands with cases mounted on top were littered with miscellaneous material. Compositors standing at the cases could not be seen by the working foreman in the next alley. The fingers of all the compositors became black from handling the dirt-covered type and cases.

To one side was the "dead stone" upon which were strewn some pied type, leads and slugs, in addition to live and dead forms, each tied with cotton twine. At the end of the stone nearest the wall, forms were piled high upon each other with a piece of heavy cardboard between each layer to protect the type from being defaced. The lower section of the old-fashioned stone apparently had become the catch-all for everything for which no regular place had been provided. Here were some rags, an oil can, a quart-size benzine can, several piles of type forms, an old box containing small tools, a half dozen or more discarded newspapers and an old scrap book. Nearby without the benefit of adequate illumination was a storage cabinet. On its shelves, numbered with chalk, were some galleys of type to be made up into pages in addition to loose halftone cuts,

zincs and electros which should have been stored in a safer place away from dirt.

In the middle of this composing room was the lockup stone, the large drawer filled with bastard sizes of reglet, string, mallets, quoin keys, and the shelf underneath covered with the usual meaningless and discouraging litter of piled up and dusty type pages.

This was the atmosphere and scenery in which this young foreman began to learn his trade. He often wondered why he stuck to it. But the fascination of printing kept him there even when his orderly mind revolted against so much confusion. In spite of disorder, in spite of exasperating waste of time and effort, a lot of good work was turned out of that plant. He learned how to space a line properly even if he had to hunt for the spaces. He learned something in the unscientific but "practical" shop way of handling the balance of type masses and white space. But every job meant hunting for something. Each man's alley showed the result of attempting to monopolize pet materials, some of them hidden away so securely that even the "owner" couldn't always find them. Storage of standing jobs and cuts meant finding a bare spot somewhere big enough to hold them. Memory was the chief guide relied upon to tell where they were. The scrap book under the "dead stone" was this young devil's first effort at saving time for he was usually given the job of finding what was wanted. To save himself from continually calling for help he had to straighten out the scrap book. No one else had ever had time to keep it up to date although it represented the only organized effort of that shop to keep a record of anything. He soon learned that it was easier to look in a book for some needed form than to handle the heavy type pages in several piles and to search the dead stone and shelves.

With the lapse of time the personnel of this plant has changed. Men have come and gone. The volume of business in the plant has increased greatly but the composing room didn't change much until the present foreman — one who knew its good points and its failures — was put in charge. I'm not intimating the composing room changes could not have been made before, but the fact is they were not.

There is something that touches a man's pride to go back into the "old shop" as an executive and have a chance to "do things." It isn't always easy because when a shop has gone the road of this one, the manager usually develops an hysteria complex over the composing room, calling it the "sink hole" of the business and other such discouraging terms.

This was a case to test the resourcefulness of anyone. It didn't require a cost accountant to tell that this composing room was losing money. So far, the manager was right. But neither did it take a lot of investigation to prove that the loss could be cut down materially, if not entirely eliminated. Until such results were shown, however, there was no money available for the much-needed new equipment.

The first thing this new foreman did was to have the windows washed and to arrange to have them kept clean. This not only made the compositors more cheerful but it materially reduced the light bill. Then began a systematic battle against dirt and disorder. He taught a new porter lessons in good housekeeping and finally convinced him that it was as necessary to keep dust and dirt from accumulating on top of machines and furniture as it was to sweep the floor. Brass rule cases were taken out of win-

Continued on Page 39

Any Competent Compositor Can Operate the Ludlow

Specially trained operators are not required for the Ludlow when the change-over is made from single-type composition. Any competent hand compositor can acquire proficiency with the Ludlow quickly and easily.

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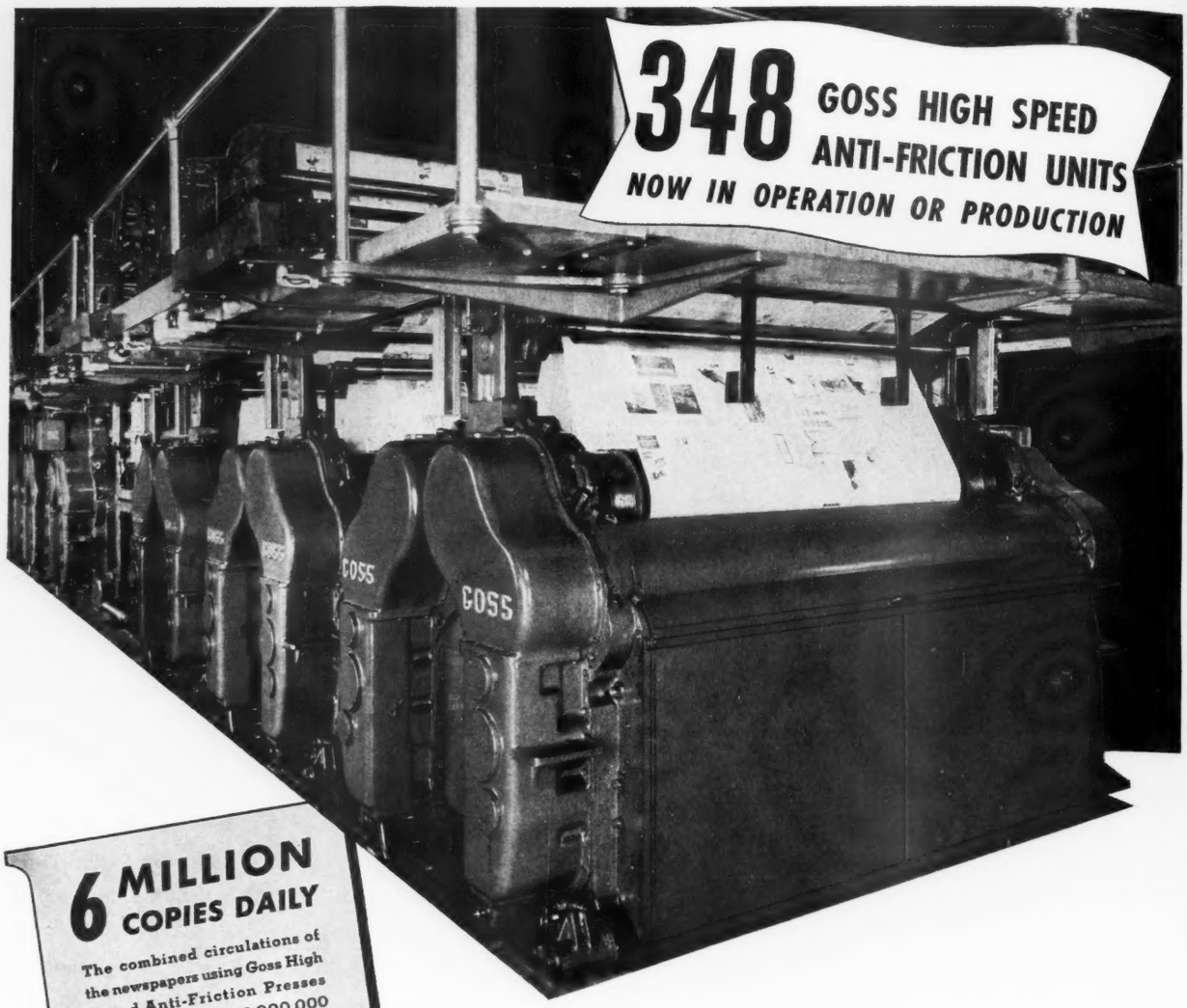

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LEADING ARTICLES

NOVEMBER 1940

"Sink-Hole of the Business" 2
JOHN W. KNOX

Eight Suggestions for Tax Economy 7
FRED MERISH

How Is Your Visibility? 9
JOSEPH T. MACKEY

Universal Solutions Should Be Avoided 10
I. TORNBERG

Check Up Market Value of Press 11
GORDON MONTGOMERY

New England Mechanical Conference 12

Checking Device for Stereo Color Plates 16
FLOYD ELROD

Plate Mounting Development 18
LEE AUGUSTINE

Stripping Technique in Photo-engraving Plants 20

Equipment and Supplies 28

Printing Patents Report 33

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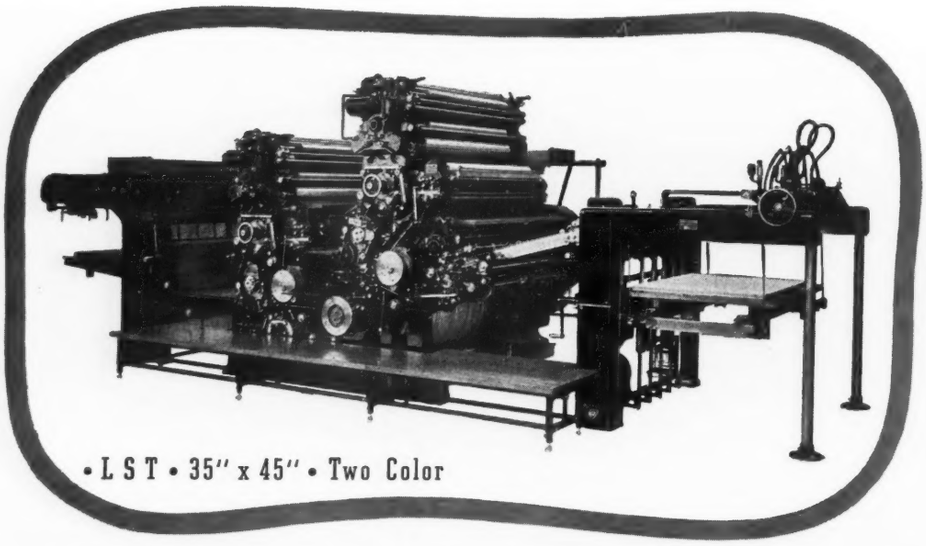

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Eight suggestions for **tax** *economy*

By **FRED MERISH**

TAXES are now a major expense. Mechanical superintendents or production managers, although not directly concerned with the preparation of tax returns, can do their bit to minimize taxes by administering plant operations with this objective in mind but unless production executives know something about tax procedure or have at least an elementary knowledge of tax details, they cannot do an intelligent job along these lines. If the general management is to effect maximum economies on tax, it must have the cooperation of all department heads — not only those working in the business managerial division. It is to this end that we dedicate this paper, to give the production manager an insight into the tax problems confronting the front office so that he can cooperate in keeping taxes at minimum.

These eight suggestions, based upon years of experience with the tax returns of those engaged in the graphic arts industry, will help mechanical executives and business executives keep taxes at minimum. Even if the mechanical executive is not in a position to utilize all of these suggestions, he will find some of them helpful in the furtherance of tax economy and a careful perusal of all suggestions will aid, be the result only to make the reader more tax-conscious.

Borderline Expenses

1 — **Do not capitalize maintenance expense.** A mechanical executive should be careful to differentiate between ordinary repairs and improvements to buildings, machinery and other capital assets. If an ordinary repair totaling say $350 is considered an improvement and charged to a property account, it increases the value of asset holdings on paper but it also increases the tax. Repairs that keep equipment and buildings in ordinarily efficient operating condition, are an expense. There are numerous borderline cases of this type, which may be considered an increase in capital or an expense. Be conservative in capitalizing such items, which logical argument will support as expenses. If in doubt as to which is which, consult with the business management.

Watch Your Depreciation

2 — **Be sure that sufficient depreciation is deducted each year.** Printing equipment is expensive, hence, the depreciation charge-offs are substantial and concerns often lose considerable money through over-payments on tax because they do not plan their depreciation schedules. The production manager should either prepare these schedules or check them because he is in a position to know how well printing machinery will stand up. A taxpayer is *not* permitted to take advantage in later years of his prior failure to take any depreciation allowance or an allowance inadequate under the known facts of prior years. More than one graphic arts establishment has lost money on tax through a misconception of depreciation regulations in the Internal Revenue Code. One plant purchased a piece of printing equipment in 1934 for $10,000, estimating its useful life at 10 years. From 1934 to 1938, the firm deducted $5000 for depreciation and it was allowed. Appraising the equipment in 1938, they decided that the depreciation should be $6,666.67. In other words, the equipment had depreciated ⅔ of its original cost, was worth only ⅓ of its original cost or $3,333.33. The reserve on the books was amended accordingly but this management then found that it could claim subsequent depreciation for the adjusted value only — $3,333.33 in the 5 remaining years of estimated life, thereby losing a deduction of $1,666.67. This shows how important it is to give careful consideration to depreciation from the start so that you fix the life span and allowance per year as accurately as possible. The mechanical executive can be a big help to the general management in this regard. Figure depreciation from the date of purchase and set up a schedule of annual deductions from gross income only after careful study. On buildings used for business purposes, deduct the cost of the land. You cannot depreciate land for income tax purposes.

Depreciation Rates

Do not set the same depreciation rate on all equipment or do not set an average depreciation allowance for all working assets. This may result in higher taxes. Depreciation varies on production equipment. Even the same type of equipment may depreciate at a different rate if its construction differs in any way. If depreciation is based upon the average life of a certain group of machines or other assets, losses claimed on the normal retirement of such assets are not allowable inasmuch as the use of an average rate contemplates a normal retirement of assets before and after the average life has been reached. Under this plan, the taxpayer must wait until all assets in the group have been retired to ascertain actual loss of value at the end of a depreciation period. By setting up depreciation schedules beforehand, the production manager and business manager will be in a better position to deter-

mine whether to average depreciation according to groups or take each item separately. If all items in the group are finally written down, there may be no loss of tax but it often happens that a machine will be discarded before it has lived its normal life and in such a case, a loss may be claimed during the year in which the asset is discarded but if the depreciation is taken on an average basis, this deduction may be postponed for some time

Idle Equipment Depreciates

Some managements assume that because equipment is idle for a year, it should not carry depreciation. Court decisions indicate that depreciation should be taken whether equipment or buildings are used or not. If depreciation is not deducted for a unit not used, the annual rate must be applied toward the reduction of the remaining value in the asset, thereby decreasing loss upon abandonment. If the taxpayer fails to take the yearly allowance, he cannot take it in a later year and cannot make up the difference upon abandonment. Outlays for designs, drawings, patterns, models or experimental work, which may improve a product, may be subject to depreciation allowances if the Commissioner of Internal Revenue consents thereto.

The method used in computing depreciation is more an accounting problem than one of tax, nevertheless, it has a bearing on tax economy. Depreciation, depletion and obsolescence are moot subjects in this and allied fields. Production managers should see that the method used lines up with factual depreciation, that the annual deductions are reasonable for the actual wear and tear, otherwise, the concern may pay too much tax. A taxpayer is not limited to any one method as long as the depreciation allowance can be proved reasonable. If you want to switch from one method to another, it is necessary to get the consent of the Commissioner of Internal Revenue.

Accrued and Anticipated Obsolescence

3 — **Deduct for obsolescence.** That which shortens the normal life of equipment is obsolescence. Actual experience and circumstances will determine when equipment or property should be retired from use. Many concerns overlook obsolescence, which may be computed separately or with depreciation. Some assets grow obsolete before they wear out and are a drag on profits even though they are mechanically fit. There are two kinds of obsolescence, accrued and anticipated, this latter deductible annually with depreciation. Accrued obsolescence, sometimes called forced obsolescence, may be deductible in full, being the difference between the depreciated cost of the property and its salvage or trade-in value. However, such deductions are usually incidental to renewals and replacements.

Keep Accurate Records

4 — **Keep accurate records on production, costs and all data** incidental to the filing of tax returns so that the necessary check-ups can be made at any time. Many tax losses result from inaccurate or inadequate recordings of production data.

Watch Income Tax Laws

5 — **Keep abreast of income tax laws.** Courts frequently render decisions which may change methods of computing tax in your favor, likewise with amendments to existing laws. If you over-pay through ignorance of such changes, you may be out of luck because the Treasury Department may not enlighten you. Do not base returns upon decisions made several years ago. They may be changed any time. Newspaper and business magazines often report such changes. File them for reference. If in doubt about any phase of tax return preparation, consult your banker or the nearest income tax office.

Tax Evasion—Tax Avoidance

6 — **When a transaction may be interpreted in more than one way** with equal propriety, use the interpretation in your favor. This is not tax evasion. It is tax avoidance. There is a big difference. The Supreme Court has ruled that, "The legal right of the taxpayer to decrease the amount of what otherwise would be his taxes or altogether avoid them, by means which the law permits cannot be doubted. It is well settled that a taxpayer may resort to any legal methods available to him to depreciate the amount of his tax liability, so long as his efforts are confined to law." There is no evasion if there is no concealment of facts.

Credit For Loss Carry-over

7 — **Take the permissible credit for a loss carry-over.** The 1939 amendment to the Internal Revenue Code allows the taxpayer to carry over losses sustained in 1939 as a deduction from 1940 income, and if the loss is greater than 1940 income, the excess may be carried into 1941. Such losses may extend for two years.

Expenses and Accrued Items for Taxable Year

8 — **Make each year's tax return complete in itself.** If certain expenses are omitted during the taxable year, you cannot deduct them from the income of the next year and such omissions are often many when the taxpayer waits until the last minute to file returns or keeps inadequate records. Production managers can assist the business management by making sure that all expenses and accrued items connected with mechanical operation or production are reported so that they may be entered in the taxable year, otherwise, there is likely to be an over-statement of liability, hence, an over-payment of tax. If books are kept on a cash basis, all bills should be paid up to the end of the year. Sometimes this necessitates borrowing money but the tax economies effected by these deductions make it desirable. Where books are kept on an accrual basis, taxpayers sometimes overlook in-

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Any reasonable request from an employer or mechanical executive for the printing of a notice upon a subject other than the ones listed above will be granted.

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WORKING FOREMAN — Compositor capable of taking full charge of plant. Also do sales and estimating work. Good appearance. Will go anywhere. Small salary. Reply Box 112.

terest, payroll and other obligations due to the last day of the taxable year because these obligations haven't been paid yet. Pro-rate these expenses to the end of the taxable year and deduct from gross income even though you pay them after the end of the year.

Furnish Reports Promptly

Amounts paid because of injuries received by employes are proper deductions as expenses, limited to the loss not covered by insurance or otherwise. If no compensation is received, the loss is fully deductible within the year. Losses incurred in any business transaction are ordinarily deductible, provided they are closed transactions sustained during the taxable year. The mechanical executives should cooperate with the front office in making prompt reports of all expenditures and losses so that these items are not outlawed because they are not reported during the taxable year. This is most likely to happen during the last few months of a current year. Production managers may hold up reports for one reason or another and not turn them in until the following year is underway so that these transactions do not appear as expenditures or losses in the year they occurred, which may eliminate them as deductions from gross income and that means a tax loss. If equipment is discarded, any claim for loss must be made in the year in which the action is taken. In general, the income tax law is concerned with realized losses and realized gains sustained during the taxable year, hence, the taxpayer should see that his tax return is complete, otherwise he may not be allowed credit in subsequent years.

With 35 states having some form of income tax law, about 25% levying a "use" tax, about 75% requiring returns of some kind plus Federal taxes, the production and mechanical executive, also the business executive should make every effort to economize on tax expense. These eight suggestions, followed intelligently, will help attain that objective.

How Is Your Visibility?

Successful business flights cannot be made with certainty unless equipment is right, is carefully tuned up, and visibility is unlimited

By JOSEPH T. MACKEY*

*President, Mergenthaler Linotype Co., Brooklyn, N. Y. Abstract of address delivered before United Typothetae of America Convention, Washington, D. C., October 1940

MANUFACTURING conditions and requirements have become much more complex within the span of our memories. Selling conditions are similarly affected by these trends. The "come and get it" days have disappeared into the limbo of the past. Today, insofar as the printing and publishing business is concerned, selling is a battle of wits and perseverance, combined with the most carefully planned policies, built upon a complete knowledge of the needs and buying power of the trade. This condition has come about gradually. It represents no violent change, but is one of evolution.

In an effort to present to you the serious opinions of a number of men, I wrote to several authorities in the industry, including pressroom and bindery, and put the question to them: "Is It Time to Modernize?"

Here is a paragraph from the first reply that reached me:

> "No one can gainsay that the replacement of old equipment with modern should normally reduce the costs. But the dollar value of the savings obtainable depends upon the volume of work procurable for the new equipment, the price of the work, and whether the larger capital investment will largely offset, or more than offset, the savings in wage costs and other items resulting from the exchange or extension of equipment."

> "Obsolescence in the plant and sales lethargy and advertising stupor in the business office are the termites of the printing industry."

That statement would do credit to a banker, since it contains just about all of the factors to be found in the management problem of any business.

Here is a quotation from another graphic arts industrial leader:

> "In looking over the records of the machines we have sold to commercial plants, it appears that about half of them are now more than twenty years old. No doubt much of this equipment is still in use, perhaps only on a part time basis, but in considering whether it would pay to replace it with faster and more modern machines, consideration should be given to the technological changes which have taken place in the production of printing.
>
> "As you know, the average printing plant of twenty years ago was built around one or more individuals with more or less artistic and typographic ability, and had a general line of equipment for handling everything from a business card to a dictionary. Today, the successful printer specializes on labels, on calendars, or on stationery, or on factory forms, and so on. Moreover, the buyer of printing has become educated to this specialization, and now takes his work to the printer whom he believes best equipped to handle it.
>
> "A very successful printer, whom I know well, has adopted this policy of specialization, and runs his plant three shifts. Because of his specialization and low costs he is able to employ salesmen over the entire country and to compete for business from the East as far west as California. Ten years ago he had fifty to one hundred competitors — today he has five.
>
> "Under the competitive conditions there is more to the problem of equipment-replacement to the average printer than merely substituting for a number of old units a smaller number of faster up-to-date units. The printer must choose the field in which he expects to specialize and equip himself accordingly. The production methods and the equipment in most cases will be entirely different than those in use twenty years ago to produce the same type of product."

A splendid statement, carrying a wealth of wisdom, written by a man who,

Continued on Page 37

Universal Solutions of newspaper technical difficulties by others should not be applied without first analyzing all details of your own problem — Machine tool builder, publisher and craftsman contribute for common good of all

By I. TORNBERG *

*Vice President, Wood Newspaper Machinery Corporation, New York. Abstract of address delivered before the New England Newspaper Mechanical Conference, Boston, Mass., October 1940.

FOR newspaper production, many tools are available. The manufacturers of printing presses, regardless of make, are now building presses of greater ruggedness and greater precision and with better printing quality than ever before. Steel and ball bearings have increased the life of the modern press and the safety of its operators. The introduction of flying pasters has made possible greater production of newspapers without further increasing the speed of these presses. Better tensions and more rigid construction of bearings, cylinders and side frames, have made it possible to maintain uniform impression throughout the run. Manufacturers of automatic machines for casting and finishing plates have made possible the production of a great many plates with less wear and tear on the part of stereotypers. Being free from many former manual exertions, craftsmen can now give more thought to quality and let the machine take care of quantity.

The adoption of these and other tools have contributed to relieve today's craftsman of many of the hardships which plagued his predecessors, but we must not permit these aids to lessen our appreciation of the necessity for the old style of craftsmanship. The development of this craftsmanship is promoted primarily by the old-fashioned sweat-of-the-brow method — otherwise known as experience — and secondly, by the free exchange of ideas and experiences. It is gratifying to note that the old habits of secrecy regarding ways and means are now passing out of the picture.

There is considerable danger in attempting to apply too literally the solution found in another plant for a similar ill experienced in your own plant. Before attempting to apply a cure make a full diagnosis of the difficulty which may have arisen in your plant. The trend of the technical questions asked by some printing executives and the answers given by others who have had experience along similar lines at conferences and in trade journals indicates there is a tendency by a part of the craft to accept the cure in one plant as being necessarily the cure in another plant. I have noticed a tendency not to make allowances for varying elements which enter into the cause of the difficulty, to look for the remedy before the ailment is fully understood. It is sometimes forgotten that a certain condition may be caused by any number of elements which enter into it, that a problem may be brought about in one plant by a totally different set of circumstances than a similar problem in another plant. The true craftsman will try to break down the various causes which might possibly bring about that condition.

During a discussion at one of the mechanical conferences, a question was raised from the floor as to the amount of ink which should be used to print a given number of 16-page papers. A considerable discussion followed presentation of the question, with a wide disagreement among several of the members attending that meeting. One of them stated that he used much less ink for the same number of papers, while another said that could not be so, as in his plant a great deal more ink was used. This is a good example of what I mean by applying an arbitrary yardstick to a problem. Allowances were not made for the fact that one newspaper is probably published in a part of the country where the paper is quite moist, where humidity is high and where the editor comes from the tabloid or pictorial school of editing and believes in a black paper with many pictures — while the other newspaper under consideration is being printed somewhere in the North in a dry climate, where the printed page area is of a different size and where the editor believes in a gray paper with an almost complete absence of pictures.

Another question was one relating to the amount of pressure which should be employed on a stereotype mat roller. I was asked to answer that question. My answer was that, frankly, I had no way of knowing how much pressure should be applied to the mat in a mat roller and if I did, it would probably serve no useful purpose to publish it, because of the great variety of conditions under which mats are molded. These variations may be due to many things, such as the type of mat roller used, the diameter of the upper roller, the combination of molding blankets, the type of mat used, and most important of all, the character of the makeup of the page itself, ranging as it does from a classified or stock market page, at one extreme, to a very open page, at the other.

Sometimes questions are asked as to how many pounds per inch of paper width should be used on web tensions, or how many inches of contact are needed for good printing between the printing cylinders or on the form rollers. It is obvious that the amount of tension which some one executive finds best in his plant would be totally inadequate in another man's plant. The reasons may be (1) The type of press used, (2) The type of tension used, (3) Whether the blankets are new or beaten in. The width of contact between cylinders and rollers likewise is dependent upon many elements such as (1) Character of the printing blankets, (2) Type of printing rollers used, and (3) More particularly on whether the plates are made in antiquated casting boxes or in a vacuum-equipped casting machine, which pro-

Continued on Page 40

They're Inseparable Says Tornberg

WE must not make the mistake of assuming that the tool can be made to take the place of the worker or that the worker can replace the tool. Together they can be made to accomplish much. When an attempt is made to use one to the exclusion of the other, troubles begin. Craftsmanship alone is not sufficient. Technology alone is not sufficient. One must have the proper tools of his trade and one must know how to use those tools if the best results are to be achieved.

CHECK UP

Market Value of printing press with proposed cost of precision overhaul to determine justification for expense required to obtain accuracy

By **GORDON MONTGOMERY***

*Miller Printing Machinery Company, Pittsburgh, Pa. Abstract of address delivered at Erie, Pa., before Caxton Club's 500th Printing Anniversary Celebration.

SOME fifteen odd years ago, as a junior salesman for another prominent cylinder press manufacturer, I walked into a plant in Portland, Maine, to hear for the very first time a discussion of precision printing and precision printing presses. It appeared that the printer in question had just had a visit from our famous friend, Lex Claybourne, during which Mr. Claybourne had advised him with both force and emphasis that his old cylinder presses were badly in need of "Claybournizing." In other words, the suggestion was that the machines be not only restored to their original degree of accuracy and efficiency, but Mr. Claybourne contended that he could make them even more precise than they were originally when shipped from the factory.

You can well imagine that to a junior salesman of a very prominent press manufacturer such a story was practically heresy. To be honest, it seemed then that any statement to the effect that a press could be made better than it was when originally shipped from the factory, appeared much like the story about "the gilding of the lily." Since then, however, it has become almost generally recognized that precision machinery is as essential to the economical production of good presswork as is precision form material and precision presswork. Today, too, cylinder presses are built with still greater precision than was the case even fifteen years ago.

When a modern cylinder press leaves the factory its cylinder will in all probability have been ground to a tolerance of one tenth of one thousandth of an inch (0.0001 in.).

* * *

That cylinder, also, will be absolutely concentric within that tolerance. The bed bearers, by which the cylinder is driven on the printing stroke, will likewise have an accuracy of a split thousandth of an inch. Even the bed, with its powerful reciprocating mechanism, will be held to almost microscopic accuracy. The bed, in turn, rests on specially prepared steel strips, machined and often hand finished to absolute flatness. Between these steel strips on the bed and the steel strips on the wayframe of the press are inserted hardened and ground rollers which, like the cylinder, have a tolerance of 0.0001 in. The rigid wayframe, often weighing as much as 2½ T., is machined and hand finished to a tolerance which equals or excels the dot-for-dot register obtainable as the finest printed product of the press itself. The driving mechanism of the bed and cylinder are also made with accuracy, the bed driving racks, for example, being held to a tolerance of plus or minus a small fraction of one-thousandth of an inch to each foot of rack. The gears which mesh in this rack, in turn, are cut on the finest precision gear cutting equipment, and each gear is tested not alone for physical constituency but also against a master gear to assure absolute accuracy. This modern accuracy is of course also carried into the manufacture of every portion of the press — the inker, the feeder, the delivery, etc.

While minute differences or inequalities still exist in even the finest modern press—be it platen, rotary or cylinder—as a result of permissible differences in the bending and torsional strengths of the materials used, even their total is so small as to be quite imperceptible in the actual printing process. If a form consisting of Hacker Type High Blocks, made with the utmost obtainable precision, be placed in the bed of a Miller press just shipped from the factory, for example, it will be found that an absolutely uniform impression will be obtained from bearer to bearer, from deadline to inkplate, without makeready of any kind. From the foregoing it will be evident that no makeready of any kind would be required for the process of printing on a brand new cylinder press if the form material used were exactly type high in all of its areas, with the exception of such makeready as would be desirable to accentuate or minimize certain portions of halftones, or process engravings, or electrotypes.

Unfortunately, however, no such ideal situation exists in the average pressroom, not alone because of inaccuracies in the materials used to make up the form, but also because of inequalities in the presses themselves, a great majority of which are old or greatly worn and out of adjustment. Undoubtedly a majority of plants operate cylinder press equipment in a condition which costs a great deal of money in additional makeready time. Therefore, the skill of a pressman is called upon to overcome by makeready the deficiencies which should be corrected by the skill of a mechanic instead.

Whether or not a press should be completely overhauled with precision printing specifically in mind, can be determined only after inspection by an expert printing press mechanic of the individual press in question. By such an inspection it is possible to determine, within reasonable limits at least, the cost of the materials and work which would be necessary to place the press in sufficiently precise operating condition. With such an estimate, it is then possible to decide by comparing the market value of the used machine in question with the cost of its precision overhaul, the desirability of spending the sum required to obtain the accuracy desired. In arriving at such a decision, consideration should also be given to the relative economic efficiency of the press in question compared to the new machinery which has been developed over the past few years. Normally, for example, a 20x26 press of 1940 with a maximum productive speed of 4500 imp. per hr. and fully automatic besides, would be a far more profitable machine than say, a 10 to 30-year-old 25x38 hand-fed cylinder press. Very seldom could we justify the expenditure of any sizeable sum in the overhaul of such a hand-fed cylinder, though occasionally even so obsolete a machine might still be worth the expense of a complete rebuilding. Such a case might be the pro-

EDITOR'S NOTE:

BESIDES discussing the precision with which presses are now constructed, Mr. Montgomery in the accompanying speech abstract, brings up a point that often is overlooked in press rebuilding. Rebuilding does not necessarily modernize the press even though it may increase the press's efficiency above that when it was new. States the speaker: "I cannot emphasize too strongly what savings could result in many pressrooms were a careful inspection made of the presses by a man competent to decide (with the aid of an expert printing press mechanic) whether the machines in question are sufficiently accurate and precise in their printing qualities to justify their continued use, and if they are not, whether they should be thoroughly overhauled or completely replaced with modern precision equipment.

duction of publications involving many halftone illustrations, yet with only a few hundred copies involved. Here the make-ready time would greatly exceed the actual running time and therefore the precision of the press would be more important in eliminating or reducing make-ready than would the high speed and automatic features of the modern machine in reducing running costs. Of course, a large portion of even this type of work is today run on more modern equipment in most plants.

Great strides have been made in the manufacture of printing presses in the past few years. Operating speeds have been increased, operating adjustments simplified and greatly reduced in number, the quality of materials improved and maintenance costs brought to a minimum. In addition, however, and possibly even more important than these, is the fact that presses today are built to even more exacting precision standards than was the case a relatively few years ago. All phases of the industry have likewise contributed to the building up of precision materials and methods. Composing machine companies have striven long and successfully toward exactitude in the products of their machines. Many engravers and electrotypers can supply cuts exact to a fraction of a thousandth of an inch. Rollers are more nearly perfect and more durable. Paper is made with greater accuracy, both physically and chemically. Inks are obtainable in every color of the rainbow and to answer almost every need. Throughout the entire letterpress industry great progress has been made toward absolute precision.

Unfortunately, however, a large part of the great gains possible by this huge increase of precision and efficiency in materials and equipment is not possible of attainment by many printers because of the inequalities and inaccuracies in equipment which long ago should have been either discarded or completely precision overhauled.

CONFERENCE

of New England newspaper mechanical executives enthusiastically voted successful — Over three hundred attend Boston meeting — Fine technical program

By STAFF WRITER

OVER three hundred men with daily newspaper mechanical problems foremost in their minds gathered for the Second Annual New England Newspaper Mechanical Conference in Boston on October 19, 20 and 21. The three day affair was held in the Hotel Statler, Saturday through Monday. The first conference was held last October at New London, Conn., with a registration of 177.

Highlight of the conference was the five departmental clinics which were held Sunday morning, at which questions previously submitted by the members were discussed. Each clinic was presided over by a chairman who was aided by several executives who acted as discussion leaders. These men met together Saturday and went over the questions and prepared an answer for each one. After the committee's answer had been given the questions were thrown open for discussion. This plan proved to be satisfactory to all.

Saturday was Registration Day with a few committees holding meetings. Many of the men visited the Boston papers and exhibit rooms of the supply houses. The commercial exhibits were a new feature this year and the booths in the mezzanine parlors proved to be a popular place for everyone.

A dinner was served Sunday noon and this was followed by a speaking program at which three men, all widely known in the newspaper field, gave talks on modern methods and improvements. President F. M. Britton presided at this session and after introducing several guests presented the speakers.

Velo Cold-Set Process

The first speaker introduced was John M. Masterson of J. M. Huber, Inc. Mr. Masterson discussed *The Velo Cold Set Ink and Printing Process.*[1]

Researching in Readability

Director of Agencies Walter B. Patterson of Mergenthaler Linotype Company, spoke upon the subject of *Researching in Readability.*

Mr. Patterson presented what he was pleased to term an "interim report" preceding publication of the results of investigational work in book form by Mergenthaler Linotype Company respecting readability of reading type faces. This work was undertaken by Dr. Matthew Luckiesh and Frank Moss in collaboration with Mergenthaler in basic studies in type legibility.

To clear the decks previous to starting the studies, the speaker stated all traditions, prejudices and inhibitions which have been known or accepted or disputed by printers and psychologists were "thrown overboard."

In the discussion with Luckiesh and Moss previous to undertaking the work, it was observed that they used the word "visibility" in much the same way that Mergenthaler executives referred to "legibility." The speaker stated it took a little time to sense the fact that really the investigators and Mergenthaler executives were not thinking about either. Actually, they were trying to approach the subject of *readability.*

During the course of establishing methods to be used, an instrument called a Visibility Meter was devised. This scientifically devised apparatus "looks like a pair of glasses with the mumps," said Mr. Patterson. It permits the recording of a reader's performance under varying degrees of visibility, this being gradually reduced until the speed or accuracy of the reader is sufficiently affected to accumulate comparative data under the various conditions.

There were also experiments in speed of reading of various type faces and leadings. The apparatus was s rotating drum on which galleys of printed matter were stretched, but one line being visible at a time, and the drum was caused to revolve under the speed of control of the reader, giving much the same effect as long motion picture titles which unroll before the reader's eyes.

During the course of the work, hundreds of tests were made. Some thirty or more human guinea pigs read identical copy for periods of 5 min. under all of the various type conditions which were established. Then each read again at intervals of say two weeks the same assignments. If marked variations were noted they were required to repeat the tests. In this way variables due to per-

[1]Several articles discussing the Velo Process have been published in *Printing Equipment Engineer* since first announcement by J. M. Huber, Inc. See *Cold Setting Inks* by Frank G. Breyer, p. 13, March 1940; ref. *Untoned Ink* by W. T. Diefenbach, p. 77, June 1940; *Velo Process in Newspaper Printing*, by Walter Huber, p. 22, July 1940; *Modifying Presses for Newspaper Printing with Cold-Set Ink*, by Harry W. Smith, jr., p. 22, September 1940.

sonal conditions were checked and brought into control or eliminated.

The definition of readability of type connotes a quality of *ease* of reading. That in turn suggests the measurement of "visual fatigue." We asked: "Can eye-fatigue be measured?" It can. Out of a mass of psychophysiological theories a practical solution was evolved.

So far as we have knowledge, after making many tests, the "Blink Test" devised by Luckiesh and Moss has successfully met all criticisms as to its right to claim the distinction of solution to the important question concerning eye fatigue.

The apparatus which made possible the measurement of eye-fatigue is known as the Electromyograph. This device enables the recording of the movement of the muscles of the eye through the electrical currents generated by such movements.

This "Blink Test"— the scientists call it the "eyelid reflex" which is the characteristic and unconscious action of the eyelids, is probably the most important factor appraised in our studies.

The speaker stated it was not possible to report conclusions in many of the tests made, due to the fact that much basic work must needs be done. Further, the checking of all findings has made necessary the withholding of some interesting results. Mr. Patterson did, however, discuss a few definitely determined findings.

For example, the speaker cited one question which has been asked of printers and publishers many times: "What effect has the color and texture of paper on ease of reading?" Ten types of paper varying from white to deeper tints and with textures from coated to antique finish were tested. Their reflection factors were measured. A given series of reading tests of the same type face printed on the papers was carried on with the human guinea pigs.

The results of the tests with respect to the readability of the papers are of interest to book publishers. The India Tint Antique and the Natural Antique head

Executive Groups at New England Mechanical Conference

Top — Mrs. R. M. Fitzgerald; R. M. Fitzgerald, Mechanical Superintendent of the Worcester (Mass.) *Telegram-Gazette*, is the new president of the New England Newspaper Mechanical Conference; Production Manager Herbert Stanger of the *Christian Science Monitor*, Boston.

Second Row — Geo. H. Morrill Co.'s New England Manager E. J. Shattuck; Vice President Tim Ryan of I.P.I.; Jack Burke, Production Manager, Gannett Newspapers, Rochester, N. Y.; Warner Huss, New England Representative of Wm. C. Herrick Ink Co.; C. Clifton Seavey, Foreman of the Stereo-Press Dept., Portsmouth (N.H.) *Herald;* in background is Northern New England Representative Charles Brigham of Geo. H. Morrill Co.

Third Row — Production Manager Francis Britton of the Nashua (N.H.) *Telegraph*, 1940 president, presided at the Boston Conference; Walter Patterson of Mergenthaler Linotype Co., discussed "Researching in Readability"; I. Tornberg of Wood Newspaper Machinery Corporation, addressed the executives on "Technology and Craftsmanship in the Newspaper Plant"; John M. Masterson delivered a talk on "The Velo Ink Process"; at extreme right is R. M. Fitzgerald, new president of the New England Newspaper Mechanical Conference.

Fourth Row — Edwin A. Hutt, Composing Room Superintendent, Beverly (Mass.) *Times;* Wm. C. Otter, Imperial Type Metal Company; L. M. Sloane, Monomelt Company; Al. Q. Ellington, Goodyear Tire & Rubber Company; George C. James, Fall River (Mass.) *Herald-News.*

the list, followed at an interval of about 5% lower by White English Finish and White Dull Coated and fairly saturated yellow with high relative visibility. Below these followed the stronger tints such as light blue-green, yellowish-green, melon, terra cotta and red.

In tests made to determine the optimum readability of a book page set in 10 pt. Textype, 21 picas measure, set solid and leaded from 1 to 6 pts., (by weighting the solid page as 100), the solid and 1 pt. setting revealed identical results. Two point leading showed better by 10, the reading being 90. When the leading reached 3 pts., it was of no practical advantage to lead wider.

The speaker also discussed the fixation factor test, comparative tests on readability of several type faces and type boldness and visibility.

As the result of Blink Tests, the accepted premise that typewriter faces are tiring to the eye under extended reading time, as compared with well designed and fitted type characters was unquestionably proved scientifically.

Third speaker, I. Tornberg, Wood Newspaper Machinery Co.

Following the speakers a short business meeting was held at which time the reports of the secretary-treasurer were approved and by-laws were adopted.

Officers Elected

Richard M. Fitzgerald, Production Manager of the Worcester *Telegram-Gazette* was elected president for the coming year to succeed Mr. Britton. Mr. Fitzgerald in accepting the office thanked all those who had made the conference possible and successful, especially the traveling representatives who had spread the word throughout New England. Mr. Britton also expressed his appreciation for the fine cooperation received from everyone and hoped everyone would continue to give Mr. Fitzgerald the support they had accorded him.

Other officers elected are: Bernard F. Garrity, Production Manager Hartford *Times*, Vice-President; Walter C. Crighton, Composing Room Superintendent, New London *Day*, Secretary-Treasurer, re-elected.

Directors — One year: Herbert T. Stanger, *Christian Science Monitor* and Ralph S. Johnson, Brockton *Enterprise;* Two years: Chester M. Spooner, Pawtucket *Times* and Charles A. Staley, New Haven *Register;* Three Years: John J. Mahoney, Holyoke *Transcript* and Harry E. Zerbe, Springfield *Union;* Four Years: F. M. Britton, Nashua *Telegraph* and Glen S. Magoon, Fitchburg *Sentinel*.

The new Board of Directors decided to hold the next conference at the Statler Hotel in Boston, the tentative date being the first week-end in October.

Herbert T. Stanger of the *Christian Science Monitor* was in charge of arrangements, including hotel and exhibits, at this year's conference.

The International Printing Ink Company held Open House previous to the conference at its new plant in Cambridge and extended an invitation to all to inspect the plant and have lunch.

About 125 men remained over for the short meeting held on Monday morning at which questions presented at the clinic were discussed further, especially those that concerned two or more departments. Program Chairman Bernard F. Garrity presided at this meeting.

Composing Room Report

William Madden, Worcester *Telegram-Gazette*, presided.

In answer to the question of the best methods of handling cuts from the Stereotype Department, Mr. Fraser of Worcester *Telegram* said that he had built 10 boards and allotted one each to his largest advertisers and as the cuts came from the stereotypers they were sorted on these boards thereby saving considerable time in the searching for cuts by compositors. The best system for marking line-composing slugs brought many answers including the use of acid on the mold cap, grinding the number in the mold cap and punching the constant liner and stamping the casting side of em quad matrices.

Another question that brought variable answers was the separating of proof room from the composing room. John M. Collins of American Type Founders ended the discussion by saying that in the Philadelphia *Ledger* the only thing that annoyed the readers was when the noise stopped.

William Madden and John L. Burke of the Gannett papers answered the question of reducing store proof corrections by saying that their papers charged for revised proofs.

The page cost question showed that about 20 of those present kept page costs. Production Manager John L. Burke of the Gannett Newspapers stressed the point that every foreman should keep some kind of a system for the benefit of his paper as well as himself.

The old problem of which is more advantageous, to set market ads with mixers or other machines and cut in the various types, ended as it always does, many on both sides of the fence, with the remainder stating that local conditions is the only answer.

Other questions discussed were the allowance of shrinkage on advertisements, two-letter mats, advertising mark-up systems and the care of machines.

Stereotype Meeting

Ernest Gifford, New Bedford *Standard Times*, served as chairman.

The question of open plates breaking when run at high speed was answered by Gene Proctor of the Boston *Herald*, as being overcome by increasing the tin content of the plate to over 5%. He was backed in this by Charles Olton, Imperial Type Metal Co., Stereotype Superintendent Elliott of the *Christian Science Monitor* and Aaron Cohen of Acme Metal.

The dropping of metal behind the mat in the casting box and also sticking to the tailpieces brought several more into the discussion arena, including John McNeil of the Portland *Press-Herald* who had lagged his box to the floor to prevent it from moving. George Clark of American Publisher's Supply stated that they were treating tailpieces for Junior and Tubular casting boxes to overcome sticking. Mr. Ryan of the New London *Day* used oil in wiping cardboard tailpieces.

Jack Kearns of Burgess Cellulose Co., said he thought too many, when sending mats to other papers, used too old molding corks and blankets. A little more care would overcome some of the bad printing in connection with the swapping or transferring of mats.

Other discussion included the reducing of amount of mat backing, temperature-controlled water for cooling plates, the loss of metal through dross and the effects of excessive humidity on mats.

Pressroom Quiz

John J. Stubbs of the Fall River (Mass.) *Herald News*, reported he had had one experience with perfumed ink and mixed it with regular ink with good results but the odor remained in the room for several days. Messrs. Murphy of Lawrence and Harry Zerbe of Springfield, sprayed the perfume through a nozzle on the folder and also had good results.

The comparison of synthetic rollers with others showed that those using this type of roller were satisfied with the results but felt that they had not been on the market long enough to make a real comparison with rubber rollers. Many stated that they were perfectly satisfied with the results obtained with all-rubber rollers.

Al Q. Ellington of the Goodyear Rubber Company, told those that were having trouble with ink spraying or misting on the ductor rollers they should try a crepe finish roller.

The question of new methods to give cleaner and sharper printing on first impression pages was answered by R. R. Reed of the *Christian Science Monitor* who related that at one time he increased the diameter of the second impression blanket cylinders but now finds that uniformity is best. Wm. F. Grenier of New England Newspaper Supply Co., said he had found some cases where the increased diameter had aided the pressroom executive in getting better results, but believed each particular case requires a separate solution.

Many pressroom executives stated they set the color before the press starts and in this way cut down their waste. It was pointed out that as far as the temperature of the ink in the fountains is concerned that as soon as the press is up to speed the temperatures on the impression cylinders increases to 125 deg., or thereabouts, and therefore the average room temperature had little effect on ink.

In answer to the storing of rollers not in use, Ed Niles of Niles and Nelson, said the storage position makes no difference to rubber rollers, but composition rollers might sag a bit if stored horizontally. Frank Stevens, of Wild and Stevens, said that in his opinion too little thought was

Continued on page 32

to Lower the COST *and Improve the* QUALITY *of Typography and Printing*

1 Clean, readable printing of even color—profitable to both the printer and the buyer of printing.

2 Appropriate type faces and decorative material, properly set and spaced.

3 Type of uniform height reduces make-ready to an absolute minimum.

4 Type and rules print without punching.

5 Every job of printing done from new perfect type.

6 Unlimited supply of new type, ornaments, borders, rules, quads, spaces, leads and slugs—always in the very best condition for good printing.

7 All the advantages of Monotype-set typography over other methods of setting job and commercial work.

8 Short fonts and picking from live jobs a thing of the past.

9 Time saved in original composition and less time consumed in making corrections.

10 The necessity of replacing bad letters in type forms entirely eliminated.

11 Unbroken rules and borders, perfect alignment, perfect register, solid lock-up and squared-up forms.

12 Straight-matter, tabular work, ruled forms and intricate composition of the highest quality produced quickly and cheaply.

13 The fastest method of composition on commercial job printing.

14 Savings begin with composition and continue through make-up, make-ready, press-work and binding.

15 Complete non-distribution of type, rules and spacing material.

16 An adequate selection of the best modern and traditional type faces.

With No Extra Cost for the High Quality of Monotype Machine-Set Type

LANSTON MONOTYPE MACHINE COMPANY SINGLE TYPES ARE BEST · MONOTYPE · *Philadelphia*

Checking Device for stereo color plate registration saves makeover and makeready time in pressroom of Southern newspaper plant

By FLOYD ELROD*

*Stereotype Superintendent, New Orleans, (La.) *Times-Picayune and States.*

THE variable shrinkage in dry mats for newspaper color printing is quite a problem for the stereotyper when making a set of color plates. Some time ago in *Printing Equipment Engineer* the writer outlined the manipulating technique used in our stereotype department for the making of a set of color plates. Since then, while we have not reached the perfection stage, we are still trying to devise ways and means for furnishing the pressroom with as near perfect plates as it is possible to obtain.

One of the devices which helps us in furnishing the pressroom with pre-registered stereotype plates is illustrated in the accompanying halftones. We call this a stereotype color plate register checking device. The object in using the device, of course, is to enable the pressmen to put the plates on the press cylinders and start printing with minimum delay, makeready or waiting for a makeover plate.

The device may be constructed from a discarded plate router cylinder or an old-style furnishing block. No dimensions or figures for constructing the various parts are given because, obviously, each stereotype executive may make his device according to the material at hand. One side of the celluloid sheet is fastened to a wooden strip held in place by screws passing through both the strip and the celluloid sheet. The wooden strip is now affixed by two hinges to a similar wooden strip previously fastened to one side of the cylinder.

A wooden strip is now fastened to the opposite side of the cylinder shown in Fig. 1. The idea for this wooden strip is to furnish two fixed bearing holes which receive the two wooden dowel pins projecting from the wood strip affixed to the free end of the celluloid sheet. The dowels provide a means for locating the celluloid sheet in exactly the same position each time it is lowered over the plate while checking a set of color plates.

In constructing the register checking device, the two wooden dowel holes are not drilled in the wooden strip at the free end of the celluloid sheet until after a plate has been placed on the saddle. Lower the celluloid sheet over the plate for a snug fit, then drill two $\frac{3}{8}$ in. or $\frac{1}{2}$ in. holes through both wooden strips and apply the dowels so that they fit tightly into the strip fastened to the celluloid. The projecting ends of the dowels which enter the strip affixed to the cylinder are reduced in size sufficiently to permit easy insertion.

In use, the black or key plate of a set of color plates is first placed on the saddle, the celluloid sheet is placed in position over the plate and fastened with the dowel pins. The stereotyper now marks with a pencil the same register marks on the celluloid sheet as appear on the stereotype plate. He then removes the black plate and checks the position of the register marks successively on the red, blue and yellow plates with the black plate register marks which have been placed on the celluloid sheet.

Placing the black or key plate register marks on the celluloid mask. The register marks on the black plate are visible through the celluloid. The red, blue and yellow plates will be successively placed on the saddle and checked against the black plate register marks on the celluloid.

Stereotype Superintendent Floyd Elrod of the New Orleans Times-Picayune and States, tells in the accompanying article about a stereotype color plate register checking device used in his plant. Here States Stereotype Foreman Eugene Kraemer is shown letting down over the black or key plate, a transparent celluloid mask upon which he will transfer the register marks against which similar marks in the red, blue and yellow plates will be checked for correct registration. Use of the device prevents faultily registered plates and eliminates makeready time after the plates have been put on the press.

It is evident that if the register marks on the various plates do not coincide, the non-registration of the plates, including a "cock-eyed" condition between any two will be easily detected.

In our plant color plate registration is the stereotyper's responsibility alone. Quite often, a set of color plates has been put on the press and the run started immediately without the delays caused by imperfectly registered plates. We feel that the use of the color plate register checking device is decidedly worth while.

ATF Profit

A net profit of $42,825.00 for the second quarter of the current fiscal year, ended September 30, is reported by Thomas Roy Jones, president of American Type Founders, Inc.

Mr. Jones further announces the closing by the company of a substantial contract for ordinance materials.

MORE SALABLE PAPERS

without increased running speed

By eliminating slow-downs for paper roll changes, Wood Autopasters increase press production without any increase in running speed. They give you a consistent, dependable, *uniform* speed of press operation . . . shorter running time, later starts, earlier finishes. Futhermore, the elimination of slow-downs and speed-ups, effected by Wood Autopasters, promotes better presswork, reduces web breaks, and cuts down newsprint waste. More than 450 Autopasters are now in successful use throughout the world . . . *Write for booklet.*

Wood Newspaper Machinery Corporation

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Development of Printing-Plate Mounting and Fastening Systems

By LEE AUGUSTINE*

*Vice-president of The Printing Machinery Company, Cincinnati, Ohio.

MOUNTING materials for printing plates have an interesting history, dating back to the early part of the eighteenth century. Wood was first used as a base for plates, and it served the purpose satisfactorily until the development of modern photo-engraving and electrotyping for fine black and color printing of all kinds. Wood, however, being fibrous and extremely porous, cannot stand up with printing plates uniformly under normal impression. Wood base is also subject to warping and variation in size, due to climatic changes, so that it cannot be depended upon to maintain accurate register of the printing plates affixed to it. These disadvantages of wood in relation to plate-mounting are common knowledge and are mentioned here merely to lead up to the subject of the printer's long search for something more suitable than wood for plate-mounting.

In an instructive article published in a recent issue of the *Process Engravers' Monthly*, London, L. F. Cotton, a well-known writer, states that the present system of wood mounts probably came from William Gedd, who announced the perfection of a stereotype in Edinburgh in the year 1725. At first, Gedd had cast solid high stereotypes, but later cast them thin and nailed the plates on wood blocks. Mr. Cotton says electrotypers followed that example, and he believes that the early zinc etchers eventually followed suit.

"The lumber in use today", writes Mr. Cotton, "is of very much better quality than of yore, though it is still subject to the same shrinkage and warping, etc.; and those same peculiarities have led to more argument between platemaker and consumer than any other single factor." Further on in his article, Mr. Cotton covers considerable of the history of early mounting materials. Concerning a mounting idea by C. F. Norman, of the Graphic Works, Tunbridge Wells, Mr. Cotton gives the following account:

"He (Norman) suggested that holes be drilled across the grain of the wood, parallel to the printing surface and substantially about the middle of the thickness, and steel rods or tubes be driven into the holes. A machine was put out by Penrose to do this operation, and it no doubt tended to prevent warping of the wood, but it could have little or no effect upon its expansion, contraction or twisting, so that in spite of the rods, perfection in mounting was as far off attainment as ever."

Another English wood mount, described by Mr. Cotton, was the "Parker" board, patented by Arthur J. Parker. It comprised four pieces of hardwood quartered, and held together by glued tongue and groove joint. This was bound all round with a T-iron, the projecting piece being recessed into the edges of the composite board. The whole board was then saturated with a water-proofing solution. The "Parker" board was intended for use as one piece, limited to a comparatively small size, although several units could be locked up together. No mechanical registering hooks or clamping devices could be used on this base.

To quote Mr. Cotton again: "The next idea, which was said to be 'a perfect cure for warping and twisting of blocks, always absolutely flat and not hollow in the center,' was constructed along the following lines: A normal straight board was taken and a number of slots about ½ in. wide and two-thirds through the thickness of the wood, were cut at 6 in. intervals. Into these were fitted slats of wood with the grain running at right angles to that of the main plank. The wood was then thicknessed and cut off as required."

Several other British mounting materials are described by Mr. Cotton in his article, including Green's "Perfect" mounting wood, and a metal-wood construction by Arthur Cox. Both those systems were useful for their particular purposes, but neither one had the advantages of mechanical register clamps or hooks. Printing plates simply had to be nailed on the bases. Mr. Cotton refers briefly to the various quad bases, and to the use of laminated board for plate-mounting, mentioning that the layers of laminated board occasionally separate through moisture, or when certain washing solutions saturate it.

American Developments

The history of plate-mounting materials in the United States reads like a romance and would require a large book to present a fairly-complete story, including many recent developments. In the U.S.A., the long parade of patents for a plate-mounting system better than wood base, is headed by one issued to M. Smith on January 20, 1819. It was granted Mr. Smith for a unit block, the kind which today is referred to as a "Book block," because its use was confined to the holding of individual stereotypes or electrotypes of book pages.

In 1832 an improvement on the Smith stereotype printing block was embodied in a patent for a mount issued to S. Sawyer. It is interesting to note that both the patent granted to Mr. Smith, and the one issued to S. Sawyer, were given by the Secretary of State prior to the establishment of the present United States patent system in 1836. The earliest record we have of a patented base in the United States is the one issued to Mr. Smith.

After the year 1832, a number of patents for improvements on and variations in the original Smith unit block patent, were issued. By 1887, the same Smith stereotype printing block had changed to a complicated mechanism, invented and patented by James Fahnestock, named by him "a metallic printing block for electrotype and stereo-

Continued on Page 42

(No Model.) 2 Sheets—Sheet 1.

J. FAHNESTOCK.

METALLIC PRINTING BLOCK FOR ELECTROTYPE AND STEREOTYPE PLATES.

No. 356,993. Patented Feb. 1, 1887.

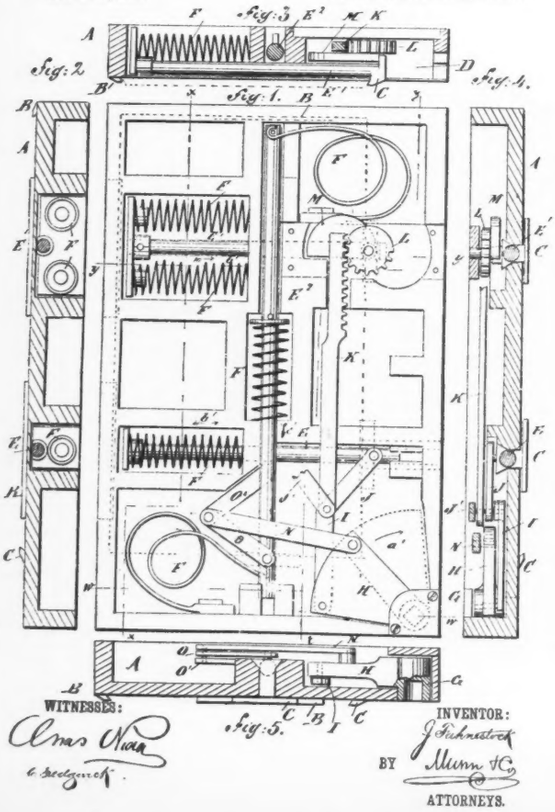


Fig. 1 — By 1887, the single-unit block patented by M. Smith in 1819, had become a complicated mechanism. The "innards" are illustrated in the diagram below. Contrast this with present-day plate-mounting equipment.

A. CASE.

STEREOTYPE BLOCK.

No. 54,110. Patented Apr. 24, 1866

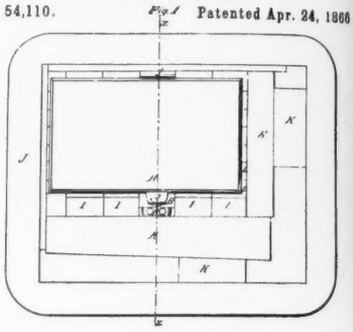


Fig. 2 — The outstanding American development in patent base was the original patent covering the sectional idea. The Case idea involved the use of type quads. This patent was issued to A. Case in April 1866.

Above: Rotary helical cutter and large direct reading micrometer illuminated by a light built into the machine. The material is held firmly to the bed by means of automatic hold-down bars. Cutter notched to break up shavings.

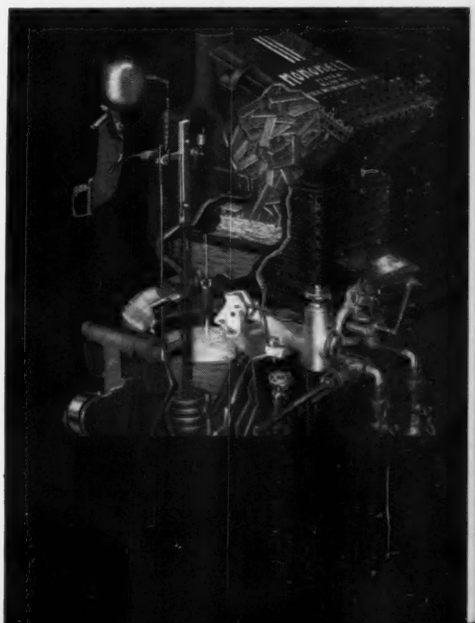
Below: View of machine showing cutter, bed, and bevel gear drive. Note that the gears run in transmission grease in a tightly closed chamber and that the bed is finely polished and will not injure the finest halftones.

SHAVE your Flat Work the Rotary Way
BETTER · FASTER · FOR LESS!

INSTALL PLANE-O-PLATE
Now available in 2 Sizes!

New speed, new capacity, at low power requirements! New strength, new precision, in an amazingly compact machine! These are advantages offered by Plane-O-Plate because it features the rotary helical method of cutting! It shaves with greater accuracy and less danger of biting, buckling or breaking plates. It handles heavier work with less pressure and less strain on the machine. Shaves flat work of all kinds including stereos, electros, base, etc., either one plate or a full bed of smaller plates of assorted sizes. Eliminates high and low cuts — assures uniform printing levels and higher quality. Available in 2 sizes—one for flat work up to 6 columns by 15 inches; and one for work up to a full page. Both machines will shave from zinc thickness to type high. Get details at once!

DROSS SIFTER: Saves metal, saves money! Fits any standard dross drum, quickly separates the good metal from the powder. Also included in the Monomelt line is a complete system of sturdy metal furniture for handling type metal from kill-out to casting.



MONOMELT COMPANY

1611 Polk Street, N. E. **Minneapolis, Minnesota**

Stripping Technique

in photo-engraving plants when using any of the several types of film — Wet plate strippers' objections overcome

By STAFF WRITER

STRIPPING, as the word signifies, is the removal of a material from one support to another. This has been a routine procedure in engraving plants in this country for many years. In some foreign countries all jobs are still photographed with a prism and printed on the metal direct from the negative on its original glass support. This is a routine procedure in many plants where exact size or color registration is required.

With wet plate, the usual method has been to dry the original negative, coat with a benzol-rubber solution to provide additional body and at the same time act as an insulator to the final coating of stripping collodion. This method was slow and subject to many difficulties. To obtain reasonable accuracy of size it was necessary to attain a balance between the negative collodion, the rubber solution and the stripping collodion.

Several years ago several "one coat" stripping solutions were offered. Basically, these are the same and consist of a soluble cotton dissolved in solvents which do not affect the original negative. A good deal of time is saved and if the material is properly handled, excellent results are achieved.

Today, with film, a different and much simpler problem with less possibility of error is now standard procedure in nearly half of the photo-engraving plants in this country. Several types of film are in use.

Where complicated inserting is not required, it is practical to use a celluloid base non-stripping film. This film can be purchased on a thin base. Offset printers print from the emulsion side and photo-engravers print from the reverse side through the film with excellent results on coarse screen for newspapers. The films are trimmed with a print trimmer or scissors, laid on the metal in the printing frame, gathered up after the print is made and filed away in an envelope with the original copy. This is the most practical method for the small newspaper shop.

In the next size shop where more work and a variety of copy is handled, sheet strip-film is practical as this can be stripped over on glass flats, inserts made for both halftones and combination plates.

The larger newspapers and commercial houses requiring volume production at the lowest possible cost use roll-film equipment. On these equipments they have the choice of two films, coated on paper, at a much lower initial cost than either of the first two films. The handling characteristics of these two films are quite different. One manufacturer stresses long scale gradation of tone values and accurate stripped size. The other manufacturer stresses dot structure similar to wet plate and toughness of film.

Stripping procedure is greatly simplified with film compared with wet plate as the negatives, after fixing and rinsing are ready for stripping without requiring the drying and coating operations incident to wet plate. Men accustomed to handling wet plate have, at times, difficulty in adjusting themselves to the change as required on each of these films. One point frequently stressed by strippers is that these films cannot be stripped face up or face down with the same simplicity as wet plate. By comparison with the tremendous advantages, this one point is a minor one and it can be overcome very simply.

In many shops today a variety of solutions are in use. Some hold the film down and prevent curling at the edges but require a great deal more drying time before the negative can be printed. Others hold the negative down firmly, especially the gelatine type of solution, but the negative cannot be removed from the glass intact.

A new solution, announced experimentally a month ago apparently covers all the objections offered by the wet-plate trained men as it enables the stripper to strip any type of stripping film, either face up or face down, and easily restrip the film after printing. Negatives stripped with this material dry down as quickly as though stripped with water alone.

Many stripping difficulties are directly traceable to the fixing baths. Frequently the hypo bath, completely underestimated as to the valuable service it performs, is incorrectly mixed or used beyond the point of proper fixing. The formulae and prepared packages of dry chemicals offered by the various manufacturers do not always render satisfactory service and for this reason a liquid hardener is now being offered experimentally. The solution is added to the plain hypo-water bath and it appears to completely eliminate the difficulties as to stripping and to maintaining correct size.

It is very important to properly clean the stripper glasses just before stripping. A slight trace of scum on the glass prevents the film moving freely on the glass prior to blotting down. It is now becoming standard practice in many plants to clean off old film and then place the glass in a storage tank or tray containing a weak detergent solution until the glass is required for use.

Grade A blotters of the non-lint type should be used and purchased ready cut with instructions to the paper house to cut the blotters in small quantities on each cut to avoid lint on the edges. This is indeed a minor extravagance and will eliminate a great deal of negative lifting to remove lint. Cotton of the Egyptian type (not Egyptian cotton) shreds less, lasts longer and saves time. Several sharp stripping knives are an asset and the type using a removable razor blade chip is the most convenient.

During humid weather it is always advisable to dust the negatives with magnesia carbonate powder and warm the flat to approximately metal temperature immediately before printing on the metal.

Newspaper Color Selector

A *Newspaper Color Selector* has just been published by Howard Flint Ink Company. Besides showing the full range of inks available for newspaper color printing, the book shows the A.N.P.A. standard colors, yellow, red and blue. The shades approved by Metropolitan Sunday Newspapers, Inc., are also shown. These are yellow, red and Nos. 1 and 2 blues. Flint's regular newspaper color inks are shown in a range of 72 colors. These were produced from a plate ranging from 1/8 to 3/4 tone screen values, including solids.

The arrangement of the book is such that printing executives may determine without difficulty just how any shade of a certain color will appear. The specimens are printed on newsprint.

The book is plastic bound in stiff boards, 9⅞ in. by 15½ in.

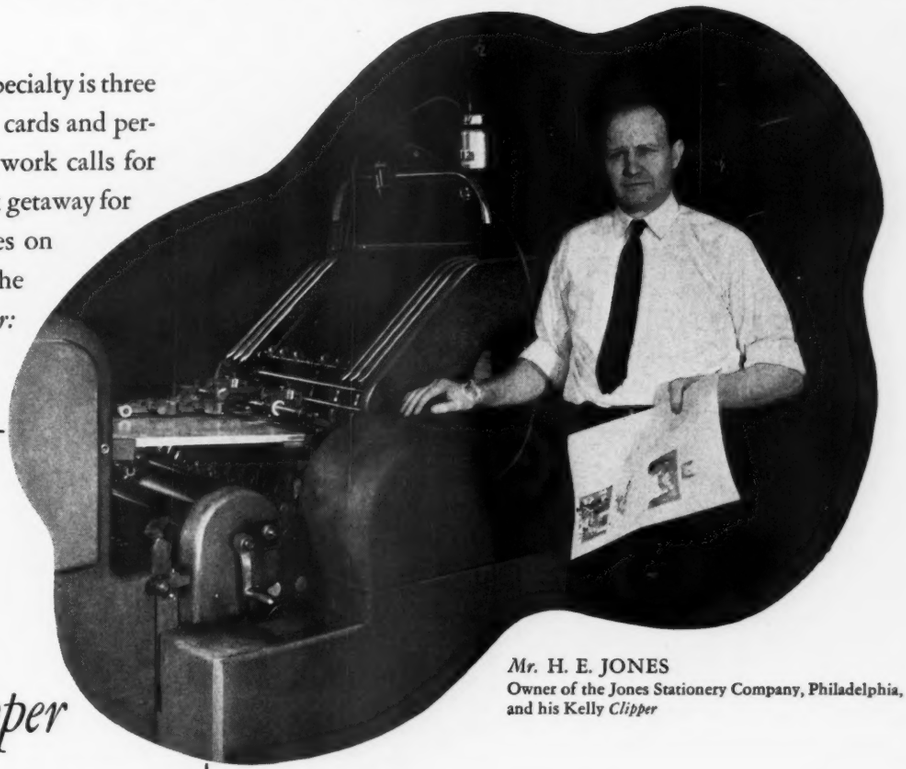
Newspaper executives may obtain a copy by writing Howard Flint Ink Co., Detroit, Mich.

Recent Linotype Installations

One or more Linotypes, many of them with self-quadders, have been installed by the Hartford (Conn.) *Courant;* Paterson (N.J.) *Evening News;* Tipton (Ia.) *Conservative;* Frankfort (Ky.) *State Journal;* Gilman Press, Madison, Wis.; Greenfield (Mass.) *Recorder-Gazette;* Peerless Printing Company, New Orleans; Newport News (Va.) *Daily Press* and the *Times Herald;* Centralia (Ill.) *Sentinel;* Lynchburg (Va.) *News* and the *Advance; Argus-Champion,* Newport, N. H.; Atlanta (Ga.) *Constitution;* Bismarck (N.D.) *Capital* and the *Capital Shopper;* Winchester (Ind.) *Journal-Herald;* City Blue Book Press, Chicago; Tampa (Fla.) *Tribune;* Hemphill Press, Nashville, Tenn.; McKenzie (Tenn.) *Banner;* Lincoln (Neb.) *State Journal; Idaho Commoner,* Idaho Falls, Idaho; *Coffee County News,* Enterprise, Ala.

KELLY **Clipper** handles difficult stocks at **4600** an hour!

*H*ere's a printer whose specialty is three and four color Christmas cards and personalized stationery. His work calls for hairline register and quick getaway for numerous imprint changes on short runs. Listen to what he says about his Kelly *Clipper:*



Mr. H. E. JONES
Owner of the Jones Stationery Company, Philadelphia, and his Kelly *Clipper*

"*I find that the Kelly Clipper*

will handle all classes of stock. Only last week we ran a deckle edge stock without any trouble at a production of 4600 per hour. I also find we have less makeready on the Clipper due to its impressional strength. On account of its simplicity we make wonderful time on short runs."

*T*he experience of this printer is typical of many Kelly *Clipper* owners who are getting more production of fine quality color work and run-of-the-hook jobs than they ever could with slower, less modern equipment. The time saved with the *Clipper* enables them to make more profits on the *extra* jobs they are able to handle. You can do as much for your business. Send for new five color press sheet, or ask your ATF Salesman for a demonstration. Do it today!

The Kelly *Clipper's* largest sheet size is 14x20½ in.; smallest, 3¼x5½ in.

Other famous Kellys: New ATF 17x22, largest sheet 17½x22½ in., smallest, 7x10 in.
No. 1 Kelly, largest sheet 22x28 in., smallest, 8½x11 in.
No. 2 Kelly, largest sheet 24x35 in., smallest, 8½x11 in.

ATF
AMERICAN TYPE FOUNDERS
200 ELMORA AVENUE, ELIZABETH, NEW JERSEY • BRANCHES IN TWENTY-THREE PRINCIPAL CITIES

TECHNICAL LITERATURE

Photoelectric Relays

General Electric has published Bulletin No. GEA-1755C, four pages illustrated, which describes Photo-electric Relays and Accessories.

How To Get Better Electrotypes

How To Get Better Electrotypes is title of 16 page and cover booklet, illustrated, published by International Association of Electrotypers and Stereotypers. Contains simple description of electrotyping process, how to lock up a form for electrotyping, and shows how defective plates are produced from imperfect form material. *Printing Equipment Engineer* considers this booklet an important contribution to printing's technical literature. A copy may be secured from your electrotyper.

New SKF Catalog

SKF Industries, Inc., has just released a 36 page catalog entitled *SKF Spherical Roller Bearings*. The bulletin contains illustrations of roller bearing applications, information on bearing selection, timesaving computations, and drawings of various types of roller bearing design.

Regal With Cairo

Intertype announces this month the combination of Regal and Cairo Bold as shown below. Special sizes of Cairo Bold

THIS paragraph is set in a new combination of 5½ point Intertype Regal No. 2A duplexed with **Cairo Bold No. 2.** 1234567890 **1234567090**

THIS paragraph is set in ten point Intertype Regal No. 2A with **Cairo Bold No. 2.** 123 **123**

THIS paragraph is set in nine point Intertype Garamond Bold duplexed *with Italic and* SMALL CAPS. 123 *123*

were designed to align with the oversize Regal. This combination is now ready in 5½, 7, 8, and 10 point sizes.

Nine point Garamond Bold with Italic and Small Caps are also shown.

Rotary Precision Planing

Bulletin, published by Monomelt Company, 8½ in. by 11 in., printed in two colors and well illustrated, describes Plane-O-Plate Rotary Helical Cutter Shaving Machine for all flat work, in 6 col. and full-page sizes. Handles work from zinc thickness to type-high. Electros, stereos, stereo base, wood base and plastic material may be put through the machine.

Serving the Public

Published in 5½ in. by 7½ in. size, The Olean (N.Y.) *Times-Herald* is distributing copies of a booklet entitled *Serving the Public*. The book is written to present a short history of the paper; discusses the editorial, advertising, mechanical, circulation, photographic, community activities, job printing vicinity correspondents and gives general information to plant visitors and those whom the *Times-Herald* would like to have know about the general making of a newspaper. The booklet is well illustrated. It's an excellent promotion idea.

Under the title *Mechanical Department*, the mechanical equipment necessary to print a newspaper is discussed and Mechanical Superintendent N. G. Steltz's supervisory duties are explained.

The booklet is personalized by imprinting the name of the recipient on the inside front cover.

Booklet Shows Radiants

The Ludlow Typograph Company has issued a 12 page booklet, printed in five colors. The booklet shows members of its new Radiant family of typefaces in

A POPULAR Ludlow face

30 pt. size, Ludlow Radiant Bold

use in advertisements and commercial printing. The colorful examples offer many new ideas in layout and in the use of typefaces.

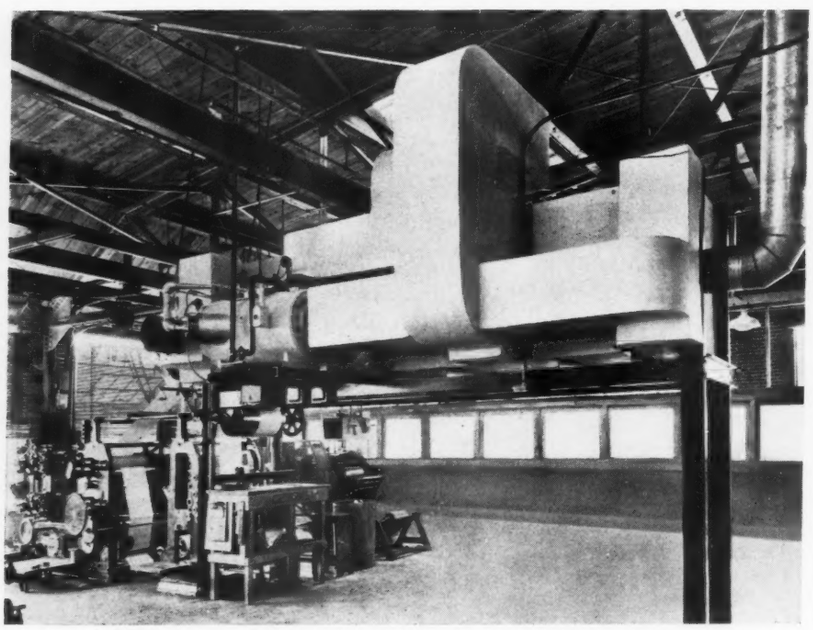
On four pages of the booklet are shown separately all sizes of the four members of the Radiant family — Medium, Bold, Bold Extra Condensed, and Heavy, each of which is fonted with regular and alternate round caps.

Copies of the booklet may be obtained on request from the Ludlow Typograph Company, 2032 Clybourn Avenue, Chicago, Illinois.

Hammermill Officials

Following the passing of former President Ernst R. Behrend, the Hammermill Paper Company announces the following revised list of officers:

N. W. Wilson, President and General Manager; O. F. Behrend, Treasurer; D. S. Leslie, First Vice President and Assistant General Manager; W. F. Bromley, Secretary; W. T. Brust, Vice President and Assistant Treasurer; H. F. Obermanns, Vice President in Charge of Manufacturing; H. R. Baldwin, Vice President in Charge of Sales; M. Harrison, Vice President in Charge of Industrial Relations; F. P. Klund, Assistant Secretary and Advisory Engineer, and A. E. Frampton, Assistant Secretary, Advertising Manager, and Assistant General Sales Manager.



An unusually efficient installation of hot air heater equipment for the setting of Vaporin inks is in operation in the plant of the Benjamin C. Betner Company, Devon, Pa. Great economy of space is claimed for this installation by the International Printing Ink Division of Interchemical Corporation and Gehnrich & Gehnrich, Inc., Woodside, N. Y., who did the engineering.

The use of hot air instead of radiant heat is effective in the printing of bags and other products of the Betner Company, according to executives of International Printing Ink, who also point out that the use of radiant gas heat or hot air is dependent on the production requirements of the plant and the type of work to be printed.

The horizontal unit shown in the illustration sets up off the floor about 8½ ft., allowing plenty of head room and occupying no floor space. A vertical unit which functions similarly, occupies a minimum of floor space. Great flexibility is claimed for both types of units. Each type of unit is used according to requirements of floor space — whether or not space can be spared for the heater.

HAMMOND MEANS *Everything* TO YOU!

"HAMMOND" means 60 years of specialization in the building of quality sawing machinery . . . 60 progressive years, which have seen the introduction to the printing craft of the original TrimOsaw, then the famous Glider and Mercury TrimOsaws which today stand alone for outstanding value and versatility.

Hammond has pioneered with advanced improvements which have revolutionized all sawing practice.

Glider TrimOsaw illustrated . . . write today for complete detailed information.

Hammond Machinery Builders INCORPORATED

KALAMAZOO, MICHIGAN, U.S.A.

1604 DOUGLAS AVENUE

Truck Caster Lift

By G. A. RIGHTER*

*Mechanical Superintendent, Palladium Publishing Corporation, Richmond, Ind.

AT the *Palladium-Item*, we have studied the problem of providing a means for lifting page-form trucks sufficiently clear of the floor to make the casters accessible for cleaning and lubrication. As is shown in the illustrations, we are now using a device which has proved satisfactory in every respect.

As will be seen the body of the lifting device is shaped like a truncated rectangular triangle with parallel bases. The "block" is made of hard maple, 18 in. long, 3 in. thick at the bottom and 1 in. across the top of the block; the block is made so that one section is 5 in. high from the base and the other section is 7 in. high from the base. Because we have trucks with two heights of crossbars from the floor, it was deemed advisable to make the block with two different lifting heights. On the top of each section is a length of ⅛ in. thick steel to prevent wear. The handle is made from a piece of ¾ in. pipe threaded into a 1 in. hole drilled in the body of the maple block. The tool is so made that it will lift the truck casters 1 in. off the floor.

View of newspaper form truck lifting device discussed by Mr. Righter in the accompanying article.

Illustration shows application of newspaper form truck lifting device. The lifting tool body is placed under a cross member of the truck, after which the handle is brought to a vertical position. The leverage exerted by the tool raises the truck casters 1 in. off the floor. While cleaning and oiling the casters, the truck is held safely by the wedge section of the tool.

For trucks having an X-frame, the lifting tool should be made long enough so that it can be inserted under both ends of the cross member at one end instead of the middle.

Time for making the tool, including all materials, cost less than $5.

EXECUTIVE ¶s

Richard J. O'Brien, formerly superintendent of Bonnar-Vawter Fanfold Company, Cleveland, became associated with the production department of Gilman Fanfold Co., Niagara Falls, N. Y., in November.

Composing Room Superintendent Wilford Coddington of the Youngstown (O.) *Vindicator*, and Mrs. Coddington, have been receiving the congratulations of their many friends upon the second successive birth of twins. The twins, boy and girl, were born October 22. The first twin children, (boys), are now 2 yrs. 9 mo. of age.

Morris E. (Mose) DeLater has succeeded Roy S. Chaffee (retired) as chief composing room machinist of the Dayton (O.) Daily *News*, according to announcement made recently by Composing Room Superintendent Fred F. Brooks.

A. T. Mann, Jr., vice president in charge of sales for Intertype Corporation, is now touring the country visiting prominent publishers and printers and the Corporation's branch offices. He will return to his home office at 360 Furman Street, Brooklyn, N. Y., on or about December 15.

William O. Wilson, 58, Ohio representative for Ludlow Typograph Co., passed away at his home, 420 Parklawn Dr., Rocky River, on Tuesday, October 22. Mr. Wilson learned the printer's trade, owned and edited the Sabula (Ia.) *Gazette*, and at various times represented Mergenthaler Linotype Co., Intertype Corporation and Ludlow Typograph Co.

James Fulk has succeeded R. J. O'Brien as superintendent of Bonnar-Vawter Fanform Co. in Cleveland.

N.P.E.A. Meeting

THE 1940 meeting of the National Printing Equipment Association was held at the Mayflower Hotel in Washington, D. C., on Wednesday, October 9. President Thomas R. Jones presided. Besides electing officers for the coming year, the Association meeting, upon recommendation of its Directors, decided among other things to continue financial support of certain school educational work during 1940, adopted an operating budget, and instructed the secretary to continue his work in gathering sales statistics from Association members. The secretary reported a total membership of 54 printing equipment manufacturers and suppliers.

At a buffet luncheon meeting served for members and guests, Public Printer A. E. Giegengack reported concerning the successful management of the printing equipment exposition held in New York in the fall of 1939. Mr. Giegengack's report showed that the exposition had been conducted at a profit of $35,425, of which $13,406.95 had been contributed to the International Association of Printing House Craftsmen, and $13,400 had been returned to the 203 exhibitors as a rebate upon their rentals. Members of the National Printing Equipment Association were unanimous in their praise of the manner in which the Exposition had been conducted.

By vote of the Executive Committee, Harry L. Gage of Mergenthaler Linotype Co., was added to the Executive Committee. Philip P. Merrill of Ludlow Typograph Co., Walter A. Sittig of H. B. Rouse & Co., and Fred S. Tipson of T. W. and C. B. Sheridan Co., were re-elected Directors for three-year terms.

Officers are as follows:

President Thomas Roy Jones, American Type Founders, Inc.; Vice President R. V. Mitchell, Harris-Seybold-Potter Company; Secretary James E. Bennet; Treasurer James S. Gilbert, Dexter Folder Company.

Executive Committee — Thomas Roy Jones, Chairman, American Type Founders, Inc.; Neal Dow Becker, Intertype Corporation; Arthur Bentley, Miehle Printing Press & Manufacturing Co.; Harvey D. Best, Lanston Monotype Machine Co.; James S. Gilbert, Dexter Folder Company; R. V. Mitchell, Harris-Seybold-Potter Company; Harry L. Gage, Mergenthaler Linotype Company.

Directors — Neal Dow Becker, Intertype Corporation; Arthur Bentley, Miehle Printing Press & Manufacturing Company; Harvey D. Best, Lanston Monotype Machine Company; Donald C. Cottrell, C. B. Cottrell & Sons Company; Harry L. Gage, Mergenthaler Linotype Company; James S. Gilbert, Dexter Folder Company; Thomas Roy Jones, American Type Founders, Inc.; Philip P. Merrill, Ludlow Typograph Company; R. V. Mitchell, Harris-Seybold-Potter Company; Harold T. Simpson, Printing Machinery Company; Walter A. Sittig, H. B. Rouse & Company; Fred S. Tipson, T. W. & C. B. Sheridan Company; E. O. Vandercook, Vandercook & Sons.

BIG *Game or* SMALL

Hunt it with Good Advertising on

CHAMPION PAPER

If your customers are really serious about bagging their share of business, there is almost no end to what you and they can accomplish by shooting plenty of good sales ammunition, on Champion paper. Remind them, however, that business hunts elusive game, and that persistence is needed to keep the business larder filled. Customers appreciate the extra value you give them in any of Champion's coated and uncoated book, offset, postcard, envelope, cover, and cardboard. Help them choose their game and bag the limit with good printing on Champion paper.

THE CHAMPION PAPER AND FIBRE CO., Hamilton, Ohio

MILLS AT HAMILTON, OHIO . . . CANTON, N. C. . . . HOUSTON, TEXAS

Manufacturers of Advertisers' and Publishers' Coated and Uncoated Papers, Cardboards, Bonds, Envelope and Tablet Writing . . . Over 1,500,000 Pounds a Day

DISTRICT SALES OFFICES

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GPO Graduating Class

COMMEMORATING the graduation exercises of 94 apprentices in the Government Printing Office, a beautiful brochure has been printed and distributed. The graduating exercises were held in Harding Hall, Washington, D. C., on Saturday, October 12. The brochure was designed year book style; outside cover measures 10 in. by 12⅞ in. The Frenchfold Cover is a light blue stock with die cut panel in which appears symbolic design, wood cut style.

Public Printer Giegengack, holding in his hand the apprentice year book, as he accepts the bronze plaque which was the apprentice gift to the Government Printing Office.

Speakers at the graduating exercises were Russell H. Herrell, Administrative Assistant to the Public Printer and Director of Personnel; Public Printer A. E. Giegengack, and Vice President Harry L. Gage of Mergenthaler Linotype Co. Mr. Gage commented upon the speed and efficiency with which work is executed in the Government Printing Office, and stated that a number of years ago a 16 page booklet could be completed, ready for delivery, 45 minutes after the copy was received and that now he supposed "it would be 45 seconds." Mr. Gage also mentioned the marked typographical improvement in Government publications.

All of the various mechanical departments of the Government Printing Office were represented by the graduates. Employes in the Office number approximately 6300. Public Printer A. E. Giegengack, his assistants, department heads and instructors are to be congratulated upon their thoroughness.

1500 Attend Chicago Printing Anniversary Dinner

CHICAGO witnessed the largest and most impressive tribute ever paid the printing industry in the middle west on Tuesday night, October 1, when 1500 printers, their ladies, and guests attended an Anniversary Dinner at the Stevens Hotel commemorating the 500th Anniversary of Johann Gutenberg's invention of printing.

The event was a part of Chicago's city-wide "Printing Week," September 29 to October 5, which was sponsored by the Chicago Club of Printing House Craftsmen in cooperation with the Chicago Graphic Arts Federation and ninety other organizations and institutions allied with the Chicago printing industry.

Three-minute speakers at the Chicago Anniversary Dinner included Franklyn Bliss Snyder, president of Northwestern University; Mayor Edward J. Kelly of Chicago; Bishop Bernard J. Sheil of the Catholic Archdiocese of Chicago; Rev. John Timothy Stone, former president of the Presbyterian Theological Seminary; Mrs. Francis J. Waindle, of the Illinois Federation of Women's Clubs; Thomas Canty, president of Typographical Union, No. 16; George B. Utley, Librarian of the Newberry Library in Chicago; Jack L. Hagen, president of the Chicago Club of Printing House Craftsmen; George McKiernan, president of the Chicago Graphic Arts Federation; Paul Scott Mowrer, editor of the *Chicago Daily News*, and Gerald Cunningham, mail order advertising manager for the Sears, Roebuck and Company, who it is claimed, has bought more printing than any other man in America.

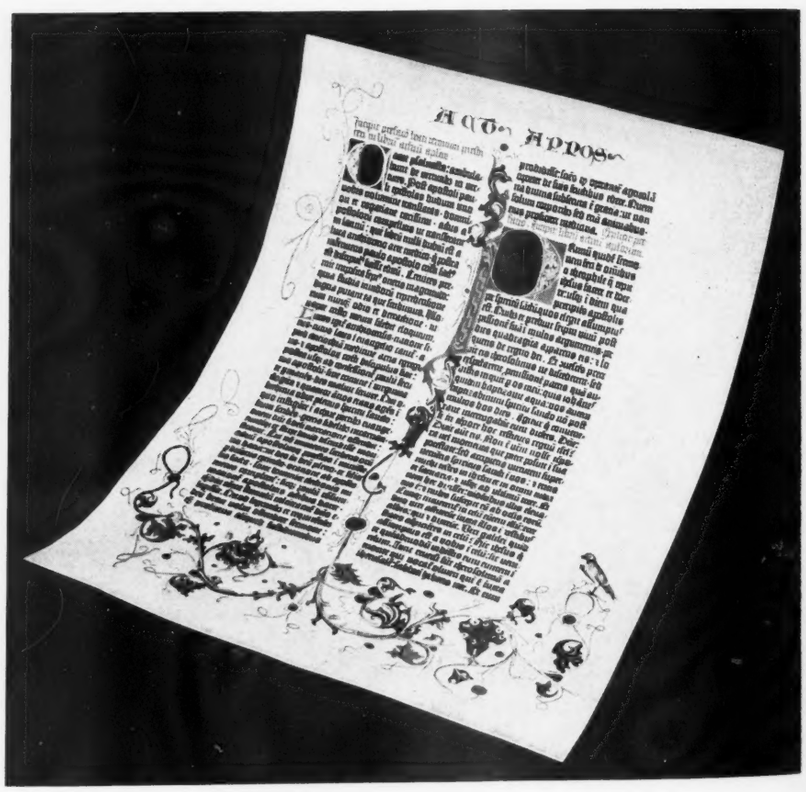
Douglas C. McMurtrie, director of typography for the Ludlow Typograph Company and chairman of the Invention of Printing Anniversary Committee for the International Association of Printing House Craftsmen, presided as toastmaster.

As a climax to the Chicago "Printing Week," Sunday, October 6, was set aside by churches of all denominations in the Chicago area as "Printing Sunday." Factual material on the invention of printing and its role in furthering the spread of religion was supplied ministers, priests, and rabbis for use in sermons.

Correction

In the article on Chemical Rubbers published in the September issue of *Printing Equipment Engineer*, it was stated: "Triakol, manufactured by the Dow Chemical Co., is a compound similar to Thiokol."

We are informed by President Bevis Longstreth of Thiokol Corporation, that at the present time the Dow Chemical Company manufactures Thiokol synthetic rubber to the order of Thiokol Corporation. The latter firm does the development, selling and research, but Dow does not manufacture any similar compound of its own.



The size of the original reproduction of an illuminated page of the Gutenberg 42-line Bible page is 12 in. by 17 in. The reproductions were distributed as souvenirs at Chicago's printing anniversary dinner.

C & G Router, Jigsaw and Typehigh

Drill • Rout High Spots • Change Key Numbers • Make Notches • Inside and Outside Mortises Finish Cuts Typehigh

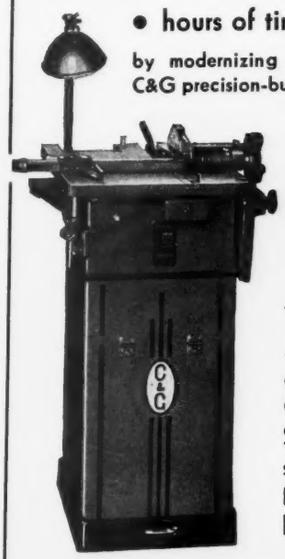
The C&G Router, Jigsaw and Typehigh Machine eliminates the necessity of sending out cuts for changes and enables printers to handle plate changes and corrections in their own plant. An ideal machine for commercial printers, typographers and medium sized newspapers . . .

A "KNOCKOUT" FOR EFFICIENCY

YOU **can save**

• hours of time • dollars in cash

by modernizing your composing room with C&G precision-built saw and router equipment.



C & G Model 3-A Saw Trimmer

This is the saw with the Any Angle Gauge, Right and Left Hand Miter Vise, C&G Patented Universal Saw Blades, with saw sharpening attachment, famous C&G Clamp and Balanced Saw Arbor.

You should investigate — write

MILWAUKEE SAW TRIMMER CORPORATION
612 EAST CLYBOURN ST. MILWAUKEE, WIS.

3 OUT OF EVERY 4

ARE TELETYPESETTER REPEATERS

As a rule, composing room superintendents, machinists and mechanical superintendents of newspapers don't keep a machine and certainly don't buy a second unless it is efficient and saves time and money. This being the case, we think you will agree that Teletypesetters must have "something on the ball" when 3 out of every 4 users buy additional units. Here's the answer—"Teletypesetters give more type in less time."

Teletypesetter can increase composing machine output from 50 to 100 percent and its fast keyboard perforator gives an all day average of 350 to 400 lines per hour on straight matter. You will grant that's real production—and it's the kind of work Teletypesetter is giving many modern newspapers in the United States and foreign countries. If you want more details as to why 3 out of every 4 users buy additional units—

WRITE FOR THIS BOOK:

It tells the complete story of Teletypesetter. It shows how to save time and money and get more type in less time. It's yours for the asking. Write for it today. Teletypesetter Corporation, 1400 Wrightwood Avenue, Chicago, Illinois.

TELETYPESETTER
REG. U. S. PAT. OFFICE

EQUIPMENT *and Supplies*

New Method of Finishing Engraver's Zinc

Rolled Plate Metal Company has announced development of a new machine-cut finish for its Zomo Electric Zinc and A-Z Alloy photo-engraver's zinc plates. The machine and the process used in connection with it are claimed to finish any size sheet of engraver's zinc up to 50 in. wide by 12 ft. long with a surface accurately machine-cut with close precision of surface "tooth" and plate thickness gauge within 0.001 in.

Briefly stated, the plates are processed by passing them back and forth on a reciprocating table between a drum and pressure roll at a predetermined speed. The plates come into contact with a continuous abrasive belt 20 ft. 3 in. in circumference and 50 in. wide. This belt, the surface of which is charged with abrasive particles, travels over a large upper drum and around a small contact roll.

The contact between the zinc sheet and the cutting abrasive on the belt is positively controlled by micrometer setting, so that in case the unfinished plate should be uneven in thickness, the thicker part will be ground away to produce an even gauge thickness all over the zinc plates.

In explaining the new plate-finishing method, manufacturer states that besides the means for mechanically processing the plates, the important element consists of the method of application of the abrasive grains to the belt. The most efficient shaped grains for coated abrasives are approximately twice as long as they are wide. Therefore, it is important that these grains be embedded in the adhesive which holds them to the belt so

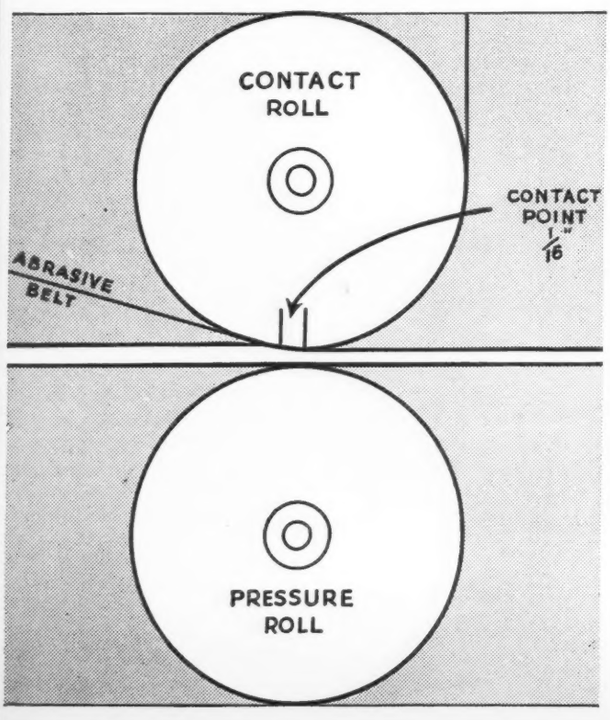


Fig. 2.—Diagram illustrates new method for polishing photo-engraver's zinc plates by Rolled Plate Metal Company. The 1/16 in. contact between abrasive belt and plate, maker states, prevents formation of scratches or ridges.

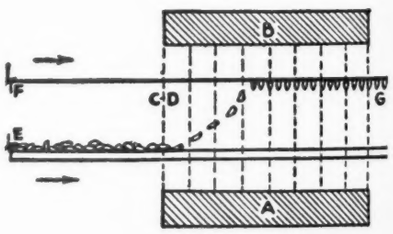
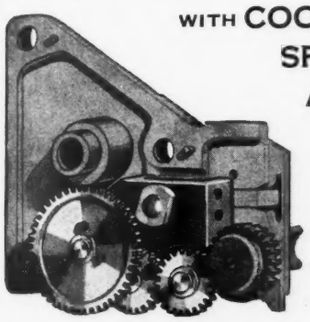


Fig. 1 — Diagram illustrates method of affixing abrasive grains to adhesive on one side of belt used in finishing photo-engraving zinc plates by Rolled Plate Metal Company. A is negative electrode; B is positive electrode; C-D represent lines of electrical force; loose grain is carried on conveyor belt E; abrasive belt (adhesive side down) is shown at F; at G are shown the abrasive grains embedded vertically in glued surface of the belt.

MODERNIZE OLDER LINOTYPES AND INTERTYPES

WITH COOK SLOW SPEED ASSEMBLER



PRICE $12.50
SLOW SPEED OR INTERMEDIATE SPEED (Interchangeable)

WHAT DOES IT DO?

On the old style Assembler, the star wheel travels faster than the matrix as it comes from the belt, giving the latter further impetus and allowing it to strike the rails or preceding matrix with such force as to cause it to "bounce," "jiggle" or "lay back."

This momentary "laying back" results in frequent transpositions, brought about in this manner: The impact of the matrix advances the assembler slide more than enough to accommodate this one matrix. The bottom of the matrix slides forward so that the fast spinning star wheel cannot effectively push it immediately to an upright position. The matrix or spaceband strikes the matrix on its left side and enters the line in a transposed position. This condition, annoying to the operator, discourages fast, efficient composition, or induces costly errors.

The Slow-Speed Assembler corrects this condition by reducing the speed of the star wheel by half (two to one ratio), or three quarters (1½ to 1 ratio). Changeover made in a few minutes.

On initial orders either *Slow Speed* or *Intermediate Speed* Assemblies may be specified. If, later, a change from one ratio to the other is desired, it may be made by simply changing two gears, at small cost.

WHAT IS IT?

It is a complete unit that is fastened to the stud of the old Assembler casting. Installation is easily made in fifteen minutes time, merely by substituting this unit for the old equipment.

It comes with a flexible tube so that all the bearings can be oiled from the *outside*.

This is another "Star" contribution to increased efficiency at a low cost.

Precision TRADE ★ MARK Parts

FOR BEST RESULTS WITH THE ABOVE USE ACE MATRIX DELIVERY BELTS

LINOTYPE PARTS COMPANY

NEW YORK, 203 Lafayette Street
KANSAS CITY, 314 West 10th Street
CHICAGO, 318 West Randolph St.
MINNEAPOLIS, 503 Fourth Ave., South
DENVER, 1441 Blake St.

ZINK CUT CEMENT PRICES in the United States: 75c per large tube; $6.00 per dozen tubes; $5.00 per dozen tubes in gross lots.

TIME

If all production and mechanical executives could control *exactly* the time element involved in printing production, costs perhaps would be considerably lower. The smart executive, however, is the one who minimizes production time by adopting means (no matter how small) for facilitating production. One of these is

Booth's Zink Cut Cement

Conserves time consumed in mounting cuts exactly as indicated in the advertiser's layout. Also eliminates time consumed in hunting lost or misplaced cuts. Fastens zinc, copper and plastic cuts, stereo shell casts and electros to wood or metal base.

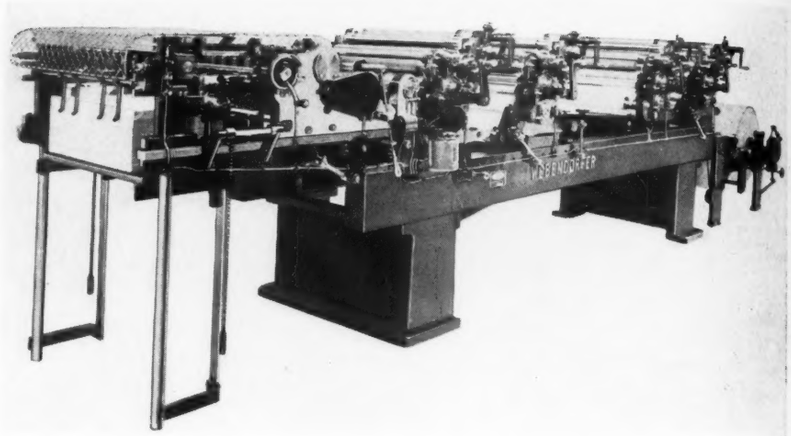
A trial tube will cost you 75c.

Foreign Distributors SEARS, LTD., Toronto, Montreal, Winnipeg, Vancouver, Canada, JUNGER & JUNGER, Goteborg, Sweden

THE E. A. BOOTH RUBBER COMPANY
364 ROCKEFELLER BUILDING • CLEVELAND, OHIO

that they will stand uniformly on end. This abrasive now used for the first time in finishing zinc plates is applied to the belt so that the grains are affixed in the adhesive in a vertical position to assure 50% greate cutting accuracy than was possible with the old method of making coated abrasives.

The positioning of the abrasive grains which contact the photo-engraver's zinc plates during the finishing operation, is accomplished by an electrostatic process employing 50,000 v. The grains jump to correct position on the belt in a manner similar to the swinging of the needle in a compass with magnetic force to the pole. This electric force places the grains in vertical position in relation to each other as shown in Fig. 1. This is caused by a repelling action set up in each grain.



Manufacturer states this web-fed, sheet delivery rotary press prints at 10,000 cyl. rev. per hr. from stereos, electros or rubber plates, four colors one side of web or two colors on each side of web at one operation. Maximum web width is 23 in. with 17 in. cutoff.

Prints from Stereos, Electros or Rubber Plates

The latest development by the Webendorfer Division of American Type Founders, Inc., is a rotary press constructed to print from stereotypes and electrotypes, and from rubber plates.

"The demand for high-production rotary equipment has grown to such proportions," states John B. Webendorfer, "that we have decided to undertake the production of small electrotype printing presses of the rotary type. Our out-put of these presses will be standardized, with respect to basic design, but will be highly flexible in optional accessories in order that they may be adapted to a variety of production problems."

The machine just completed is built to print 4 colors on one side of the web or a combination of two colors on each side of the web at one operation. It is equipped with punching mechanism and delivers in flat sheets.

The press will handle, at the maximum, a 23 in. web with a 17 in. cut-off. It is equipped with registering mechanism for both sideways and running away of the web. All main bearings are provided with automatic lubrication device.

A feature of the machine is that the cylinders, while ground for electrotype plates, may be built up by means of a "turtle" to the proper height for rubber plate printing. Rubber plates can be mounted with sticky back as with any standard rubber plate patent base.

Capable of delivering at the rate of 10,000 cylinder revolutions an hour, the press is adapted to printing accurate multi-color work at high production speed.

SPECIALISTS
in printers' metals

♦ Because you want materials that produce quality work at minimum cost, Imperial has always worked to furnish quality type metal and low yearly metal cost. Believing that concentration on one field leads to greater customer satisfaction, Imperial has "specialized in printers' metals."

This specializing has benefited the customers through better metal performance, intelligent service to the user and lower yearly metal costs. Because of specializing, Imperial was the first to offer the Plus Plan for keeping type metals in A-1 shape—the only way to minimize production losses. Imperial was also the first to furnish Dross Drum service to the customers and Free Metal Analysis as a running check on metal condition.

Metal users have gained by this concentration on the printing field. They say that Imperial is dependable, that Imperial metal reduces metal costs, that the Imperialized shop has no type metal problem. Decide now to benefit by this specialization—investigate

Imperial

IMPERIAL TYPE METAL CO. · Philadelphia · New York · Los Angeles · Chicago

Has What It Takes!

CHALLENGE *Semi-Steel* IMPOSING SURFACE

SMOOTH ★ STRONG ★ ACCURATE

● **Here's the ideal working surface for busy shops. It promotes speed and precision . . . stands up under severe use. It's superior to marble—won't crack or chip. Since no coffin is required, there's more work space and no gutter to catch type or spacing material.**

Challenge Imposing Surfaces are made of high grade iron and steel two inches thick. The under side is strongly reinforced by cross-ribbing, so that the surface will not sag under the heaviest forms. Furnished with or without rabbeted edge. Write for details.

The CHALLENGE MACHINERY Co.

Main Office and Factory: 372
GRAND HAVEN, MICHIGAN

Eastern Sales Office:
50 Church Street, **NEW YORK**

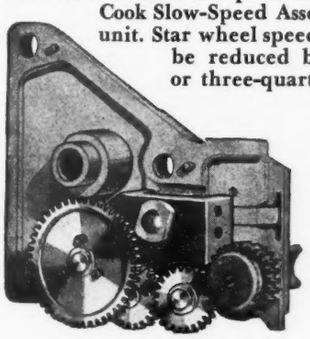
Challenge

Cook Slow Speed Assembler

Linotype Parts Company announces the Cook Slow Speed Assembler Unit for application to earlier type Linotype and Intertype assembler mechanisms. The unit, which is applied to a stud on the back side of the present assembler casting, is subtituted for the old gear mechanism.

On the old style assembler, the peripheral speed of the star wheel is faster than the speed of the matrix as it comes from the delivery belt. The faster star wheel rotation gives the matrix further impetus so that in some cases it strikes the preceding matrix with such force as to cause the incoming matrix to bounce, jiggle or assume a position at an angle to the other matrices in the line which is being composed. This action causes matrix transpositions.

Rear view of assembler plate showing Cook Slow-Speed Assembler unit. Star wheel speeds may be reduced by half or three-quarters.



The Cook Slow-Speed Assembler, states manufacturer, corrects mechanical matrix transpositions. This is accomplished by reducing the speed of the star wheel by half (2:1 ratio) or three-quarters (1½: 1 ratio).

A flexible tube is provided with each assembler unit so that all bearings can be oiled from the outside of the mechanism.

Process Roller Bulletin

Ideal Roller & Mfg. Co. has published six-page illustrated bulletin, describing equipment for coating rollers in large, medium and small plants. Rollers coated with composition on O-X base. Rollers are said to be non-shrinking, non-expanding and non-melting.

Metal Melting and Handling System

Three bulletins have been published by Monomelt Company as follows: *Simplified Type-Metal Control*, *Direct Melting of Type Metal* and *Metal Handling Equipment*. All are illustrated and describe the Monomelt method of melting and handling metal on type and line-casting machines.

Inter-Lino "Hot Blast" Bunsen-type Burner for thawing out metal frozen in gas-heated line-composing pot mouthpieces.

"Hot Blast" Burner

J. W. Kreiling announces formation of the Inter-Lino Tool Company. Address of the company is at 1504 North Pulaski Rd., Chicago, Ill. The company will manufacture and deal in tools, instruments and supplies for the maintenance of line-composing machines.

Among the tools announced is a "Hot Blast" Bunsen Burner for melting the metal in frozen mouthpieces of gas-heated metal pots and for other heating purposes. Burner attaches to gas line hose.

One-line Specimen Book

Intertype Corporation has prepared a new one-line specimen book that is now ready for general distribution to printers. The 106-page book is attractively printed in two colors and is plastic bound. All faces that have been cut by Intertype to date are shown. A letter addressed to the company's headquarters at 360 Furman Street, Brooklyn, N. Y., or the nearest Intertype branch office will bring you a copy.

NEW ENGLAND CONFERENCE

Continued from page 14

put into the storage of rollers and sometimes they took more abuse when not in use than when on the press.

The storing of newsprint and reduction of white waste were other points discussed.

Photoengraving Discussion

Burt B. Mader, of the *Christian Science Monitor*, presided.

The first question discussed at this meeting consumed a full hour. It concerned the elimination of scum in cold top development in hot and humid weather. Everyone present entered the discussion at one time or another. The following summary made by the chairman seemed satisfactory to all; The fact was established that moisture will be condensed on the enamel if the negatives and coated plate are not both warm and at even or near-even temperature. Also, the plate should be printed immediately once it is whirled and ready. Humid weather slows development materially and this may be offset to quite a degree by reducing printing time. Care and attention to these fundamentals will help greatly.

The question: *How many are using masks on hilite halftones and combination line and halftones?* showed that Messrs. McNeil of the Boston *Post;* Staley of the New Haven (Conn.) *Register* and Chairman Mader were the only three doing so. These men believe that mats have not been exploited anywhere near their limit.

Harold Render of the Worcester (Mass.) *Telegram-Gazette*, told of his short-cut method in stripping and assembling strip film negatives. He has made up a number of transparent celluloid plates of standard sizes which are placed in easy reach of the stripper. He also makes a practice of pre-warming the stripping glass while waiting for the negatives.

Tubular Press Meeting

Glen S. Magoon, Mechanical Superintendent of the Fitchburg (Mass.) *Sentinel*, was chairman of the Tubular Press meeting.

This clinic attracted many stereotypers and pressmen from plants using tubular equipment. The majority of questions dwelt upon the use of the new tubular vacuum casting box. Orlando Kimball of the Kennbec (Me.) *Journal*, stated that the number of defective plates had been reduced 90% since installation of the vacuum box.

Representative Lacuur of the Duplex Printing Press Company stated a harder blanket combination would prove more satisfactory to those using these boxes. It was also decided that proper molding and backing of mats lessened chipping if the amount of vacuum remained as set by the factory at 15 in.

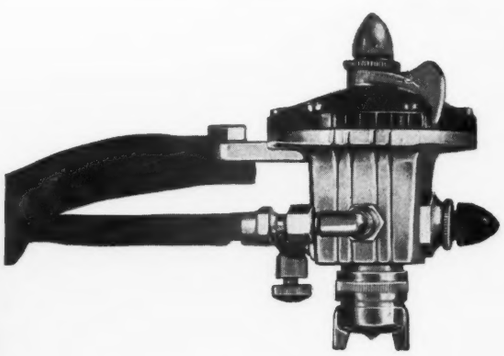
The overlaying of mats where halftones appear was explained by Mechanical Executive Ewart of Newport as being satisfactory in his plant where wax paper is used.

Mr. Lacuur also pointed out that in the use of vacuum boxes the cylinders should not be packed more than 0.173 in. but the best thickness is 0.171 in.

The question related to mounting halftones 0.005 in. or 0.006 in. above type high was discussed, but as opinions varied greatly, no satisfactory answer was given.

Intertype Sales

One or more Intertypes have recently been ordered by the following: Globe Printing Co., San Jose, Cal.; The Bell Press, Inc., Los Angeles, Cal.; Flower City Typesetting Co., Rochester, N. Y.; New York *Journal and American;* Chicago (Ill.) *Daily News;* Pawtucket (R.I.) *Times;* Haverhill (Mass.) *Gazette;* Richmond (Va.) *News-Leader;* Camden (N.J.) *Courier-Post;* U. S. Navy Dept., Washington, D. C.; San Francisco (Cal.) *Herald Press;* Barberton (Ohio) *Herald;* Bridgeport (Conn.) *Post;* Holyoke (Mass.) *Transcript-Telegram;* Syracuse (N.Y.) *Herald-Journal;* Grand Rapids (Mich.) *Herald;* Advance Press, Inc., Miami, Fla.; Bend (Ore.) *Pilot;* Hyde Park (Mass.) *Tribune;* J. W. Norwood, Valdosta, Ga.; The Patton Co., Chicago, Ill.; Century Engraving & Embossing Co., Chicago; Ft. Sumner (N.M.) *Leader;* Milwaukee (Wis.) *Journal;* Maleo Bros. Publishing Co., Hallettsville, Tex.; Lithuanian Universal Bureau, Inc., Brooklyn, N. Y.; Brooklyn *Press*, Brooklyn, N. Y.; Salt Lake City (Utah) *Tribune;* Columbia (Ill.) *Herald-Tribune;* Caldwell (N.J.) *Progress;* Iraan (Tex.) *Herald;* The Wave Publications, Los Angeles, Cal.; Arizona *Republic & Gazette*, Phoenix; The Cymbal Press, Carmel, Cal.; Northwest *Leader*, Los Angeles, Cal.; *Journal*, Revere, Mass.; J. W. Ford Co., Cincinnati, Ohio; Marshall Printing Co., Marshalltown, Iowa; Walther Printing House, Philadelphia, Pa.; I. Gould, New York.



Just as U. S. war planes overhead are a symbol of protection...so is the new ATF Diafram Gun a symbol of protection to printers everywhere against offsetting and high production costs! Thousands of owners of ATF Guns are getting clean salable sheets all day, every day! Their ATF Guns have eliminated costly slip-sheeting, racking and slowing-down of presses...for both Offset and Letterpress. The New ATF Diafram Gun is all-air operated and is now selling at the lowest prices in ATF history. Don't let another day go by without finding out how the ATF Gun can protect you! Ask your ATF Salesman for details and new low prices TODAY!

ATF
AMERICAN TYPE FOUNDERS
200 ELMORA AVENUE, ELIZABETH, NEW JERSEY • *Branches in Twenty-three Principal Cities*

PRINTING PATENTS REPORT

Covering Patents Issued Sept. 24, Oct. 1, Oct. 8, Oct. 15 and Oct. 22.

This data is compiled exclusively for *Printing Equipment Engineer* by Invention, Inc., is verified in the United States Patent Office, and is comprehensive of all patents in the field of each heading continuous from the last published issue of this magazine. For copies of patents listed here, specify the patent numbers and send 10c each (stamps not accepted) to the Commissioner of Patents, Washington, D. C.

Binding, Cutting, Perforating:

2,216,706. WIRE BINDING ELEMENT for books; made of single length of continuous wire formed into rings at certain points along its length. The holes in the edges of the bound sheets are slipped onto the circumference portion of the rings and the circumference is then tightly closed to bind the pages permanently. Invented by Albert Freundlich, New York, New York. Assigned to Kamket Corporation, 148 Lafayette, New York, N.Y. Application June 11, 1938. 2 claims.

2,217,773. MANUFACTURE OF BOOK COVERS of the type comprising several spaced strips of cardboard or the like supported by a flexible paper backing. The invention is specifically concerned with the preparation by piercing of a cardboard structure comprising spaced parallel vertical strips, at least somewhat longer than the height of the cover to be made, connected at top and bottom by transverse strips. This structure is applied to the flexible backing and then trimmed to size, eliminating the transverse parts and the excess length. Invented by Luigi Ruggero Selva, New York, N. Y. Unassigned. Application September 22, 1938. 3 claims

Composing Room Equipment:

2,216,293. TYPE SECURING DEVICE which facilitates the production of an accurately squared form and an accurately justified form for preparation of electrotypes, mats, etc. Comprises a plurality of rigid frame strips arranged to form a quadrilateral frame adapted to surround a type form and connected to one another at the corners by connecting members which allow adjusting movement. Invented by Herbert A. Knight, Oak Park, Ill. Assigned to J. M. Bundscho, Inc., 65 E. South Water, Chicago, Ill. Application October 4, 1939. 11 claims.

2,216,415. TRAY FOR POSITIONING LUDLOW SLUGS while they are being sawed to proper length. The new tray has a multiplicity of parallel slug-receiving troughs, in order that several slugs can be sawed in one operation rather that the usual practice of sawing each slug individually. Invented by John Homer Livingston, Sr. and John Homer Livingston, Jr., St. Petersburg, Fla. Unassigned. Application May 22, 1939. 1 claim.

2,218,219. TYPE BINDER FOR HOLDING TYPE together during interval of change from the galley locks to the chase. Consists of four corner members which fit around the type and are secured by four rubber-covered friction grip members into which the ends of the corner members are inserted. The result is an adjustable rectangular type binder. Invented by John J. Riehl, Cleveland, Ohio. Unassigned. Application October 11, 1939. 5 claims.

2,218,220. TYPE BINDER for holding type together during interval of transfer from galley locks to the chase. Made entirely of metal the device consists of four confining members, four to eight clamp members, and four lock members for holding the device in any set position. Invented by John J. Riehl, Cleveland, Ohio. Unassigned. 4 claims.

2,218,470. SLUG CUTTING MACHINE equipped with quickly adjustable means for cutting slugs in various lengths and faces. Machine has adjuncts designed to prevent the accumulation of scrap about the cutting element and to form a work-table for use in composing. Invented by William T. Henderson, Washington, D. C. Unassigned. Application November 13, 1937. 4 claims.

Feeding, Folding, Delivery:

2,215,458. SHEET FEEDER sucker and sucker operating mechanism, so arranged as to separate the uppermost sheet of a pile by a combined tilting, raising and side-wise movement for separating, lifting and tensioning the sheet. Invented by Headley Townsend Backhouse, London, England. Unassigned. Application May 27, 1937, in Great Britain May 28, 1936. 13 claims.

2,215,647. CORNER UNIT FOR NEWSPAPER BELT CONVEYORS which increases carrying capacity of the conveyor and uses single roller shaft-driven drive unit. Comprises three parallel drive rollers in equilateral relationship supported by a frame the end casings of which carry the worm-drive unit for the rollers. Invented by Edwin N. Lightfoot, Wauwatosa, Wis. Assigned to Cutler-Hammer, Inc., 1333 W. St. Paul Ave., Milwaukee, Wis. Application May 22, 1937. 9 claims.

2,216,286. TRIPLE PAPER ROLL MAGAZINE REEL for feeding printing presses, and full speed paper splicing device therefor. The invention is specifically concerned with a novel pulley drive system for such apparatus. Invented by Henry A. Wise Wood, New York, N. Y. Assigned to Wood Newspaper Machinery Corporation, 688 S. 2nd St., Plainfield, N. J. Application October 27, 1937. 3 claims.

2,216,655. SHEET FOLDING MACHINE adapted for concertina folding of maps, time tables, pamphlets, etc. Consists of a pair of vertically moving reciprocating folding plates located above and below the horizontal path of the sheets. The depth of the fold is adjustable as is the number of folds. Invented by George E. Smith and Wm. W. Stallworthy, Toronto, Ontario, Canada. Assigned to Toronto Type Foundry Co., Ltd., Toronto, Ontario, Canada. Application March 12, 1938; in Great Britain March 22, 1937. 4 claims.

2,217,897. WEB DEFLECTING AND SEVERING ARRANGEMENT for web supply mechanism wherein the deflecting and severing mechanism is placed in operating condition by movement of the mechanism into operative position in respect to the web. According to the invention, the rotatable part of the deflecting and severing mechanism is operated by a spring tensioned by movement of the device into operation position. Invented by Stanley C. Freeman, Mount Vernon, N. Y. Assigned to R. Hoe & Co., East River and 138th St., New York, N. Y. Application December 8, 1936. 21 claims.

2,218,217. SLIP-SHEET APPARATUS comprising a conveyor for delivering freshly printed paper sheets (or articles such as bags) from a printing press, a slip-sheet delivery mechanism for depositing a slip-sheet in superimposed relation on the printed sheet, and grippers on the conveyor so arranged as to facilitate deposition of the printed sheet and the slip-sheet in free superimposed relation upon a second conveyor. Invented by Adolph Potdevin, Garden City, N. Y. Assigned to Potdevin Machine Co., 1227 38th St., Brooklyn, N. Y. Application (original) March 9, 1937; divided and this application March 29, 1939. 4 claims.

Continued on page 34

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PATENTS

Continued from page 33

2,218,401. SHEET FEEDER for feeding sheets of tin, black iron, aluminum, and the like, to printing, coating, or varnishing machines. Of the "double-end" chain elevator type, the invention is specifically concerned with means for bodily shifting the elevator and pile of sheets thereon to proper position in the feeder. Invented by Geo. A. Martin, Pearl River N. Y. Assigned to Dexter Folder Co., North Pearl River, N. Y. Application August 22, 1938. 16 claims.

2,218,430. APPARATUS FOR COMPENSATING HYGROSCOPIC EXPANSION OF PAPER IN PRINTING PRESSES by slightly raising the central portion of the web or sheet above the level of the supporting feed tapes in order to draw the side edge of the sheet in sufficiently to restore the original width. Invented by Theodore Makarius, Flushing, and James Versera, Jackson Heights, Long Island, N. Y. Assigned to Olsen Mark Corp., New York, N. Y. Application July 27, 1939. 6 claims.

2,218,484. SHEET FEEDER of the "stream" type designed to feed sheets having downwardly curled front edges. The design prevents sheets "fouling" on the conveyor by utilising directed currents of air which play upon the sheets' front edges. Invented by Walter E. Schneider, Pearl River, N. Y. Assigned to Dexter Folding Co., North Pearl River, N. Y. Application September 16, 1939. 7 claims.

2,218,548. DIFFERENTIAL TENSIONING DEVICE for automatically controlling feeding of a paper web to the pressure and impression cylinders of a printing press. With the invention, the prevailing tension of the web controls a mechanism automatically compensating for any tendency of the web to sag or become unduly tensioned by regulating a variable drive. Invented by Joseph Pangerl, New York, N. Y. Assigned to R. Hoe & Co., East River and 138th St., New York, N. Y. Application April 23, 1938. 6 claims.

Miscellaneous:

2,216,108. PORTABLE TRIMMER for linoleum and other sheet material, comprising a power drive, a rotary blade turned by the power drive, and a novel arrangement of relatively-rockable angularly-pitched guide roll pairs for gripping and directing sheet material in travel toward the blade. Invented by Edward H. Brockway, Toledo, Ohio. Unassigned. Application May 5, 1939. 5 claims.

2,216,629. SLITTING AND CUTOFF MACHINE utilising rotary knives to slit a sheet of material into strips of predetermined length and width. The sheet material is fed by intermittently operating feeding rollers, the slip portions of the sheet being severed transversely by a swinging knife during pauses in the feeding operation. Invented by Edward R. Sabel and Frank I. Galbrecht, Rochester, N. Y. Assigned to Haloid Co., 1939 Haloid St., Rochester, N. Y. Application August 24, 1939. 12 claims.

2,216,689. PRINTING INK for typographic and lithographic processes, characterized by inclusion of 2%-10% "Syncera" wax. Louis M. Larsen, Rutherford, N. J. Assigned to the International Printing Ink Corp., 75 Varick St., New York, N. Y. Application December 12, 1936. 2 claims.

2,216,714. BRONZE MIXING MACHINE which sifts and mixes bronze, or other powders to restore their quality after they have become lumpy due to contact with printing ink or other impurities which cause agglomeration. Machine comprises a dust tight cabinet divided into two sections, the upper of which contains an oscillating basket with perforated walls to mix and screen the powder. Below this arrangement is an agitator for thoroughly agitating the screened powder. The powder is received by a pan in the lower compartment for removal. Invented by Chas. K. Hercher, Milwaukee, Wis. Unassigned. Application October 16, 1939. 3 claims.

2,217,065. PRESSURE - RESISTANT PRINTING LAYER for polychromatic rollers or plates employed in the printing of textile fabrics, comprising a major preparation of yellow dextrine and minor proportions of finely divided soap and of an acid dye. Invented by Isaac Magath, Bronx, N. Y. Unassigned. Application March 4, 1939. 5 claims.

2,217,133. MULTICOLOR PRINTING OF TEXTILE FABRICS in continuous web by a rotating stencil cylinder. Main feature of the invention is the fact that omission of the endless conveyor band usual in film printing machines by affixing the web to its carrier cloth by strips of adhesive makes intermediate drying possible. Film printing can thus be carried out in several colors on the continuous web. Invented by Emil Overlack, Anrath, Germany. Assigned to Overlack & Co., Kommanditgesellschaft "Ovack-Patente," Crefeld, Germany. Application May 16, 1939; in Germany March 16, 1938. 3 claims.

2,217,366. SILK SCREEN PRINTING APPARATUS concerned principally with a screen tensioning and guiding device to maintain even tautness and accurate alignment of a continuous screen, similarly in positions passing around each of two rolls and in positions between the rolls. Invented by Harry J. Hicks, Lynchburg, Va. Assigned to Precision Finishing Machine Corporation, Lynchburg, Va. Application August 4, 1939. 6 claims.

2,217,620. METHOD AND APPARATUS FOR PRINTING ON BOTH SIDES OF A WEB WITH THERMOPLASTIC INK, the invention being based on the discovery that a paper web is sufficiently effective as a heat insulator to allow heating of ink on one side of the web while an inked impression on the other side is being cooled. Accordingly, the method comprises first printing a web on one side with thermoplastic ink, and then printing the reverse side while simultaneously cooling the first applied impressions. Invented by Wilbur L. Jones, New York, N. Y. Assigned to Interchemical Corporation, 75 Varick St., New York, N. Y. 8 claims.

2,218,176. CHEMICAL COMPOUND INCAPABLE OF GENERATING STATIC ELECTRICITY, comprising a plastic organic disulfide free from loosely bound sulfur. These plastic compounds are useful for forming guides, rollers, etc., for contact with moving paper webs. Invented by Joseph C. Patrick, Morrisville, Pa. Assigned to Thiokol Corporation, Yardville, N. J. Application February 11, 1937. 7 claims.

2,218,474. IMPROVED TYPOGRAPHIC INKS, ROTOGRAVURE INKS, LITHOGRAPHIC TIN PRINTING INKS, enamels, varnishes, etc., characterized by containing a compatible blend of a triazene-aldehyde condensation product with alkyd and like resin. Invented by Leonard P. Moore, Stamford, Conn. Assigned to American Cyanamid Co., 30 Rockefeller Plaza, New York N. Y. Application December 17, 1938. 14 claims.

Plate Making:

2,215,551. DEVELOPING COMPOSITION for producing ink-receptive surfaces on lithographic and similar printing plates. Said not to require a fixing agent for application to the plate, the new composition is characterized in that it contains a hydroxy compound, such as phenol or cresol, capable of exerting a mild etching action on the metal of the plate. Invented by Willy O. Herrmann, Deisenhofen, Upper Bavaria, and Wolfram Haehnel, Munich, Bavaria, Germany. Assigned to Chemische Forschungsgesellschaft, m.b.H., Munich, Germany. Application January 29, 1937; in Germany February 6, 1936. 3 claims.

2,216,538. MACHINE FOR SURFACING ENGRAVER'S SHEETS OF ZINC OR COPPER. The machine is of the type employing a diamond cutting tool, a movable carriage for supporting the sheet below the cutting tool, and means for actuating the cutting tool. The invention is specifically concerned with a novel arrangement for maintaining required parallelism between the path of the tool and the surface of the carriage. Invented by Thomas J. Masse, Alexandria, near Sydney, New South Wales, Australia. Assigned to The Edes Manufacturing Co., Plymouth, Mass. Application March 29, 1937; in Australia May 12, 1936. 12 claims.

2,216,539. PROCESS FOR SURFACING ENGRAVER'S SHEETS by rolling cast slabs to a thickness slightly in excess of the desired final thickness, machine cutting excess metal from the surface of the rolled sheet to expose sub surface metal and obtain uniform thickness, and grinding the machine cut surface to remove minute ridges. Invented by Thomas J. Masse, Alexandria, near Sydney, New South Wales, Australia. Assigned to The Edes Manufacturing Co, Plymouth, Mass. Application July 28, 1939; in Australia May 12, 1936. 9 claims.

2,216,741. MACHINE FOR SHAVING AND TRIMMING STEREOTYPE PLATES, characterized by having the shaving arch cast as an integral part with the base of the machine. The invention is said not only to increase the strength of the frame structure of the machine, but also to assure holding of each successive plate to be finished in exactly the same position relative to the knife bar as was the preceding plate. Invented by John A. Isbell, Plainfield, N. J Assigned to Wood Newspaper Machinery Corporation, 688 S. 2nd St., Plainfield, N. J. Application February 28, 1939. 6 claims.

2,216,882. PHOTO-MECHANICAL PRODUCTION OF ETCHED PRINTING SURFACES, for textile and like printing processes, by creating a positive having a full size non-light reflecting reproduction of a design element on a light reflecting background, making a negative having a transparent marginally reduced reproduction of the design element, exposing a light sensitive member to the positive through the transparent reproduction, revolving the positive during exposure in a circular path to create on the light sensitive member a marginally reduced reproduction of the design element having a light unaffected central portion bounded by a light effected marginal band, and then developing the member. Invented by Owen R. Huggins, South Norwalk, Conn. Assigned to Linotone Corporation, a corporation of New York. Application March 26, 1938. 6 claims.

2,217,015. INTAGLIO PRINTING CYLINDER of seamless steel base construction and having an etching surface of electrolytically deposited iron 0.003-0.005 in. thick. Cylinder is rapidly rotated (peripheral speed of 200 ft. per min., or higher) during the electrolytic coating process. Etching is also accomplished by means of electrolysis. Invented by Irving Gurwick, Mount Vernon, and Robert A. Jennings, Pleasant Township, Knox County,

Continued on Page 36

Vacuum Releasing Switch

By O. H. RUTHENBERG*

*Mechanical Superintendent, Paducah (Ky.) *Sun-Democrat*

On our tubular type stereotype plate vacuum casting box, a push-button starts the vacuum pump automatically when the "door" of the box is closed previous to casting a plate. The 18 or 20 units of vacuum are carried until after the cast has been cooled and the door is opened for removal of the plate.

To make it possible to shut off the vacuum pump just before opening the casting box door, and to permit easy opening of the door, Pressroom Foreman Garlon Sills has installed a switch outside the casting box frame which can be operated by the operator's foot. The switch is of the spring plunger type used in closets for automatically turning on and shutting off lights when the door is opened or closed. The switch is mounted on a section of angle plate set at a 45 deg. angle as shown in the illustration. The wiring is carried in a length of BX cable which extends upwardly along the side frame to the regular vacuum operating switch shown at *3* in the illustration.

View of tubular stereotype vacuum casting box to which has been applied foot-operated switch to shut off the vacuum pump just before opening the casting box "door." At 1 is the switch which is closed to start the vacuum pump automatically when the casting box door is closed. At 2 is shown the foot-operated switch for stopping the vacuum pump just before the door is to be opened after the plate is cooled. BX cable, 3, carries the wiring.

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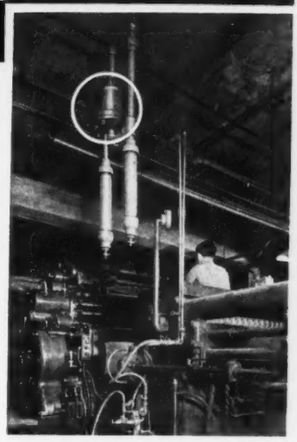

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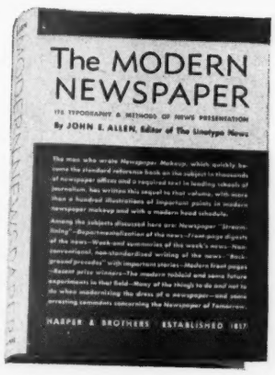

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PATENTS

Continued from page 34

Ohio. Assigned to Shellmar Products Co., Mount Vernon, Ohio. Application July 16, 1936. 3 claims.

2,217,039. PRODUCING ELECTROTYPES by holding an electrotype shell on a true surface, heating the shell, spraying a molten hard metal, such as copper, on the back of the shell (using compressed inert gas) to produce a solid flat metal backing. The plate is then cut to uniform thickness. Invented by Mark F. Beck, Rockaway Beach, N. Y. Unassigned. Application June 2, 1938. 7 claims.

2,218,011. MOUNTING FOR ELECTROTYPES OR VULCANIZED RUBBER CUTS, comprising a main portion of rigid sheet metal having tongues stamped therefrom and spaced from the ends of the plate, the free end of the tongues being bent at right angles in opposite directions to better engage the retaining grooves of the printing drum. Invented by Milton C. Taylor, Chicago, Ill. Assigned to Partridge and Anderson Co., 712 Federal, Chicago, Ill. Application June 1, 1938. 9 claims.

2,218,012. METAL BENDING APPARATUS for producing arcuate electrotype mounting plates of the type described in Patent No. 2,218,011. The invention is specifically concerned with production of the tongues of the plate which engage the printing roll. Invented by Milton C. Taylor, Chicago, Ill. Assigned to Partridge and Anderson Co., 712 Federal, Chicago, Ill. Applications (originally) June 1, 1938 and November 28, 1938; divided and this application May 15, 1939. 4 claims.

2,218,165. PLATE WHIRLER for preparing photoengraving or photolithographic plates. The device is characterized by inclusion of a motor-driven mount for holding and whirling the plate to distribute the heat hardenable sensitizing enamel, and a set of electric resistors for heating the enameled surface of the plate, the arrangement and character of the resistors being such that, though they are energized by the same switch controlling the motor, they do not develop sufficient heat to harden the sensitizing enamel until a sufficient time has elapsed to allow even spreading of the enamel by centrifugal force. Invented by Arthur H. Gaebel, Larchmont, N. Y. Unassigned. Application September 29, 1936. 10 claims.

2,218,351. METHOD FOR MAKING A MATRIX from a reenforced plastic capable of being molded in impression receiving contact with an original printing plate, type, etc. The method comprises first producing a fabric reinforced, partially vulcanized rubber sheet, then impressing the surface of the partially vulcanized sheet with a printing plate, and finally completely vulcanizing the sheet prior to removal of the printing plate. Invented by Orby B. Crowell, Toronto, Ontario, Canada. Assigned to Viceroy Mfg. Co., Ltd., Toronto, Ontario, Canada. Application August 18, 1937. 2 claims.

2,218,417. PRINTING PLATE COOLER employing a novel fluid discharge bell and coacting gauze or screen for assuring that the cooling fluid will be so dispersed as not to injure the plate being cooled. Invented by Charley Bush, Akron, Ohio. Unassigned. Application November 1, 1939. 4 claims.

Printing Presses and Supplies:

2,216,562. ROTARY WEB PRINTING PRESS adapted to printing various size products. Has an auxiliary frame, pivotally mounted, carrying a number of different size printing units arranged in pairs where the web is perfected. The supported printing units are concentric with the auxiliary frame's axis so that selected ones may be brought to the proper position. Invented by Howard M. Barber, Pawcatuck, Conn. Assigned to C. B. Cottrell & Sons Co., Westerly, R. I. Application October 26, 1939. 15 claims.

2,216,565. THROWOFF MECHANISM operated by the feeding or non-feeding of the sheets for throwing a form cylinder in a rotary printing press on or off impression. Comprises a sheet operated detector which moves slide valves actuating pressure operated diaphragms which act to throw the form cylinders on or off impression. Invented by Wm. K. Eckhard, Westerly, R. I. Assigned to C. B. Cottrell & Sons Co., Westerly, R. I.

2,217,191. ROTARY INTAGLIO PRINTING PRESS of the type including a printing cylinder and a fountain housing with means for wiping the cylinder to condition it for printing, characterized by a novel pivoted support for the wiping means and by a new arrangement for sealing the ink system. Invented by Adolph Weiss, Brooklyn, N. Y. Assigned to Champlain Corporation, Garfield, N. J. Application June 2, 1938. 18 claims.

2,217,552. INK SUPPLY ROLLER FOR ROTARY PRINTING MACHINES, comprising a yieldable tube of rubber or the like enclosing an ink chamber and provided with apertures having outwardly diverging walls to convey the ink between the periphery of the rollers and the ink chamber. Invented by Albert J. Horton, White Plains, N. Y. Assigned to R. Hoe & Co., Inc., East River and 138th St., New York, N. Y. Application August 27, 1937. 8 claims.

2,217,800. FLAT BED MIEHLE PRINTING PRESS of increased color range capacity. In tricolor form the press comprises two parallel impression cylinders and a printing cylinder in triangular arrangement, a two section printing plate for the two cylinders, means for feeding sheets of paper to the cylinders in progressive order through the press, and means for inking the plates and the printing cylinder according to a chosen color scheme. Invented by Jacob A. Hollander, Chicago, Ill. Assigned to Western Printing Machinery Co., Chicago, Ill. Application November 30, 1936. 8 claims.

2,218,151. PRINTING PRESS of the two revolution type with a reciprocating bed adapted to execute a forward printing stroke and a reverse idle stroke. A toothed rack attached to the bed is geared to a driving mechanism which also rotates the impression cylinder. Invented by Wm. M. Kelly, Westfield, N. J. Unassigned. Application July 13, 1939. 9 claims.

2,218,282. DRYING HOOD for multicolor printing machines designed to be readily moved to afford easy access to a broken web in the drying portion. Invented by John M. Downs, Philadelphia, Pa. Assigned to The Curtis Publishing Co., Philadelphia, Pa. Application May 4, 1938. 7 claims.

2,218,358. ROTARY OPERATED SWITCH responding to the action of centrifugal force for controlling the reversible variable speeds of, for example, printing press

Workups

In some plants workups are common and in others seldom if ever occur. Some of the causes are: Faulty chases and spacing material, cuts on wood bases that rock or are not rectangular, forms not firmly seated on bed of press due to too much pressure with quoins or bed clamps, tracks under bed not properly adjusted or cylinder set too low and riding the bearers too hard.

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motors. A push-button operated plugging switch to bring the motors to a quick stop is coupled to the rotary contactor. Invented by Christian A. Rasmussen, Colonial Heights, Ohio. Unassigned. Application June 13, 1939. 6 claims.

2,218,945. INKING DEVICE FOR MULTI-COLOR PRINTING MACHINES, designed particularly to prevent rapidly drying printing inks from drying in the storage well. The device comprises a pair of horizontally disposed rollers positioned in contact with each other, and specially formed end walls positioned at each end of the pair of rollers to form a well for the ink. Invented by Nils Anderson, Malmo, Sweden. Assigned to Aktiebologet Akerlund & Rausing, Malmo, Sweden. Application March 3, 1938; in Sweden January 13, 1937. 8 claims.

2,219,124. PRESS PAPER ROLL CHUCK characterized by an arrangement whereby the clamping members or leaves are moved radially into and out of clamping position by means of a tubular cam member around which the clamping members are arranged. Invented by Robt. Watson Bandy, Fresno, Calif. Unassigned. Application February 18, 1939. 3 claims.

2,219,231. IMPROVED INK RAIL for the inking mechanism of rotary printing machines. The invention is characterized by provision of each ink nozzle chamber with a long narrow opening interrupted by alternate channels and projections to provide a large number of shallow outlet channels functioning to break up any globules in the ink. Invented by Frederick Lamatsch, Grantwood, N. J. Assigned to R. Hoe & Co., East River and 138th St., New York, N. Y Application September 17, 1938. 8 claims.

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HOW'S YOUR VISIBILITY

Continued from page 9

man and boy, has been in the graphic arts all of his life.

Now, let us turn to what still another of these authorities says:

> "As to whether a plant needing enlargement or modernization should consider it a matter of immediate attention, I know that some are putting off the purchase of capital goods because they do not know what is going to happen. This is a defeatist attitude and the management of any business to which this attitude is applied will find that its competitors who possessed the necessary backbone will have outstripped it in a period of five years and left it in a precarious position."

The following statement comes from the president of a large business:

> "I cannot but believe that if I were in the printing or lithographic business today and I was at all in the position from a financial standpoint to do so, I would want to bring my plant to a basis of the most economical and efficient operation possible. My reasons would be these:
>
> "*First:* There is no question but that there has been a substantially marked improvement in the efficiency of the machinery in many phases of the graphic arts. Those who have purchased new equipment are securing material cost reductions which is putting concerns who do not have such equipment in a very difficult position competitively.
>
> "*Second:* The competition which the printing and lithographic industry faces today from radio, moving pictures and other means of publicity, demands that printed matter of the highest quality be produced at the lowest prices possible, *still maintaining good profit.* In my judgment, printing of the proper quality with modern, effective equipment only can compete successfully.
>
> "*Third:* The Defense Program is going to release such tremendous purchasing power in the country, as the dollars released rotate through other industries, that I believe that the printer and lithographer have a right to anticipate a reasonably good business; and they should put their plants into condition to produce the printed matter that will be in demand.
>
> "*Fourth:* The Defense Program, as it gains momentum, will undoubtedly command a substantial percentage of the productive capacity of the plants making the more intricate machinery for the graphic arts, because there are few industries in the country as well equipped to produce the more difficult products for which the Government must secure production capacity. The printer or

lithographer who delays the purchase of equipment may find it difficult to get it when he most needs it.

"*Fifth:* The Defense Program will probably be responsible for a gradual rise in prices because of conditions which we cannot control. As a matter of fact, we are putting in some price adjustments upward at the present time."

"*Sixth:* If I were operating a printing plant I should want to get my plant to a highly efficient state at the present time and get it paid for in the active business period that seems to be ahead of us. Thus, I would be in a position to, now and later, compete effectively and successfully for such business as will be available.

"*Seventh:* The increased costs of labor can only be met by efficiently mechanized shops."

The U. T. A. booklet descriptive of the Standard Cost Finding System recognizes an important factor in the consideration of plant performance. Here is an interesting paragraph:

> "The Cost Finding System is devised, among other things, to ascertain the cost of a productive hour. Good management requires an additional step — the ascertaining of the amount of product which the cost of a productive hour represents .... The real value of production records lies in the intimate and complete information they disclose concerning the *actual costs* of what has been manufactured."

The example used, shows the record of a printer, with a press hour-cost of $1.20 per hour, producing 800 impressions per hour, resulting in a cost per thousand impressions of $1.50. Against this is shown the record of another printer, operating at a cost of $1.50 per hour, but the press delivers 1300 impressions, thus producing a cost per thousand of $1.15—against the first printer's $1.50 per thousand.

Thus, we find U. T. A. clearly teaching the principle of modernization.

Now, let us turn slightly to another line of thinking, for a few moments. About this time each year, I read with interest the United Typothetae of America *Book of Ratios for Printing Management.*

As years pass, I watch certain trends reflected by these figures. You will permit me, I am sure, to say that some of them are not reassuring to one who is as keenly interested as I am in the well-being of the graphic arts.

Many of you will recall various remarks and writings, wherein I have pointed to the need for placing greater emphasis upon sales promotion in the printing business. Some of you will recall the booklet which was prepared and distributed to the printers of this country, called *Sixty-eight Hundredths of One Percent Allotted to Advertising in Any Business Is Pitiful.*

And yet, this year the figure shown in the Ratio Book is sixty-*seven* hundredths of one percent.

I remember, as doubtless do many of you, one of the writings of Poor Richard, telling the story of an old man at an auction sale, who when asked to expound words of wisdom to those gathered, did so to the apparent satisfaction of those who heard him. And here is the ending of Benjamin Franklin's story: "The people heard it and approved the doctrine, and immediately practiced the contrary, just as if it had been a common sermon."

I hope, to convince you there is a definite relationship between the subject of obsolescence and selling your product. Obsolescence in the plant and sales lethargy and advertising stupor in the business office are the termites of the printing industry.

What do you suppose would be the effect upon your individual businesses if the obsolete units in your plants were to be replaced with modern pieces of equipment? It is almost impossible to determine the answer to this question through the use of the figures shown in the Ratio Book, since they deal in averages, rather than individual plant figures or known equipment ages. However, after consultation with Mr. Fillmore, of the U.T.A., it is possible to place before you certain facts which should interest you.

But, first, let us agree upon some premises: (1) You *know* that time lost through slower machinery is money lost, never to be regained; (2) You *know* that time-consuming manual operations that can be done automatically are sheer waste; (3) You *know* that down-time is time for which you pay and for which you receive no return; (4) You *know* that increased volume affords increased profit-making possibilities; (5) You *know* that decreased spoilage adds to potential profits; (6) You *should know* that a piece of needed equipment never yet cost a printer a cent — it paid for itself again and again.

Let us assume that these truths are known to the printer who is a good business man. Now, I have a proposal to make. Here it is.

Let us suppose for a moment that through the replacement of certain equipment in your composing room, your pressroom or your bindery, there can be brought about an increase of but *ten per cent* in production. (And I wish to say that there are surprisingly few printing plants throughout the country into which any intelligent engineer, or many manufacturers, could go, where they could not improve that figure — taking the plants as they come.) Do you know what that would mean — using the Typothetae Ratio Book figures just published? I'll tell you.

In the case of the slug casting machine department, the cost per chargeable hour would drop from $3.77 (the Ratio Book figure) to $3.43 per hour. The cost per chargeable hour in large cylinder presses would drop from $4.70 per hour to $4.28 per hour. The cost of large folders would be $2.31 per hour instead of the present $2.53 per hour. And so on.

Why, do you know what that would mean in just the machine departments of the 102 plants whose reports were the basis of the Ratio Book compilations? It would mean the tidy sum of between $550,000 and $600,000 per year. Think of it, more than a half million of dollars out of the manufacturing effort, exclusive of material, represented by the composite amount reported, totalling $17,285,090.28. Such is the amount about which we are talking.

Let us suppose that you will apply these savings to the sales end of your business — promoting more and better selling for your own advantage. Do I make myself clear?

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giving it to nobody, *but applying the savings to your own business development.*

Printing in such business would begin to be *sold* instead of being bought.

Intelligent attention to this important part of the printing business will solve more plant problems than machinery manufacturers can hope to do. Healthy selling, aggressive promotion of your own businesses, honest and persistent advertising of your own organization, your facilities and your services will increase volume, increase profits, and what is more, it will stimulate the blood circulation within your own organization.

The first step that is required is the resolution to initiate a sound, modest, replacement program involving lagging, outmoded units of equipment. Accompanying this should be a review of existing methods used within your own four walls and a comparison with the best available modern methods and equipment. Then, as improved conditions follow the proper changes, through production stepup, apply these savings to the vitalization of your selling and advertising efforts.

It starts with you — it's yours all the way.

Model Booklets

Mergenthaler Linotype Co. has issued two booklets, illustrated. One is devoted to Single Distributor Models 8 and 14. The other illustrates and describes main features and purposes of Mixer Models 25 and 26. Size 9 in. by 12 in.

SINK-HOLE OF BUSINESS

Continued from Page 2

dows and stored in central places where anyone could find them. Type cases were taken off the tops of type stands to give better working spaces.

As nearly as possible every alley was arranged like its neighbor to make standardized places in which to work. This standard wasn't very high at first. The right kind of material cases were not available and materials themselves were scarce enough. But as the process of orderly arrangement progressed, as standing type matter was carefully checked and sorted for live and dead forms, the dead forms being distributed, materials seemed to accumulate as if by magic. Production began to increase because the compositors spent more time working and less time hunting.

Cleanliness had its effect. Clean fingers are nimble fingers. They do more work. When the clean up process had gotten reasonably on its way, men found it was easier to work with the dirt blown out of the type cases and the junk removed from the quad boxes. No one who has never worked in an old shop that operated on the "seek and find" system can realize the grand and glorious feeling that comes from reaching for a thin space and finding it where it ought to be.

It takes a lot of drive to get old standing forms distributed. But it was done. The first noticeable result was the release of two or three old tables and cabinets that had always been piled full of forms. This eased the floor space requirements a little. As a result, an unexpected development came about when it was found possible to release a few needed feet of space for the pressroom. It began to be evident too, that work was going through faster—there was less composition time on some jobs than formerly.

The imagination of any reader will tell him the rest of this story. Management, the doing the best with what he had for tools, the intelligence to recognize the loss involved in wasted human effort brought such surprising results it was not difficult to obtain money with which to improve the equipment gradually. This new equipment was more compact and saved floor space. It made proper storage on galleys under imposing tables and in auxiliary cabinets of all standing forms with an easily kept record of their location. Supplies for compositors were concentrated within arm's reach of each man. Compositors being paid at the rate of about two cents a minute need to have everything possible done for them. Like a press they ought to be able to produce steadily, hour after hour.

That two-cents-an-hour idea gripped the new foreman. It's really the key to all his plans for the composing room. Each time he saves a minute, that's two cents on the credit side. With his new streamlined composing room, he is handling a great deal more work — work produced in time formerly wasted.

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UNIVERSAL SOLUTIONS

Continued from page 10

duces much more true and uniform plates. The matter of setting printing cylinders and printing rollers properly is dependent upon uniformly surfaced plates. A true plate without hills and valleys permits the use of a "kiss" impression and harder blankets, while the plate with many imperfections, must have the cylinder and roller settings adjusted to pick up low spots. Under these circumstances the high portions of the plate are, so to speak, left to shift for themselves.

Another attribute of the true craftsman is to look for the solution of his difficulties among the many every-day variations which may creep into his operation and attack the problem at that point, instead of first condemning the machine and, as has been done in some instances, trying to eliminate his difficulty by making alterations in his equipment. For the purposes of this discussion, however, we are assuming that the equipment is in good shape.

After the "bugs" have been taken out of a machine when it is first installed and due allowances have been made for wear after a long period of operation, it is wiser to start out with the assumption that the trouble does not lie with the machine, but lies rather in one of the many ingredients or elements which enter into production of the product. For example, starting off with the stereotype department: In the design of the Junior Autoplate machine we have found that the center of the mouthpiece must be offset 1½ in. from the center of the casting box. We know of a case where the stereotyper was troubled with bad plates. He decided the mouthpiece was the cause of his trouble because it was not in the center of the casting box. He proceeded to cut and weld the pump spout in order to bring the center of the mouthpiece in line with the center of the box. Instead of overcoming the trouble, this alteration made matters worse. In all

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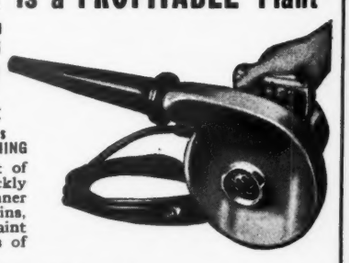

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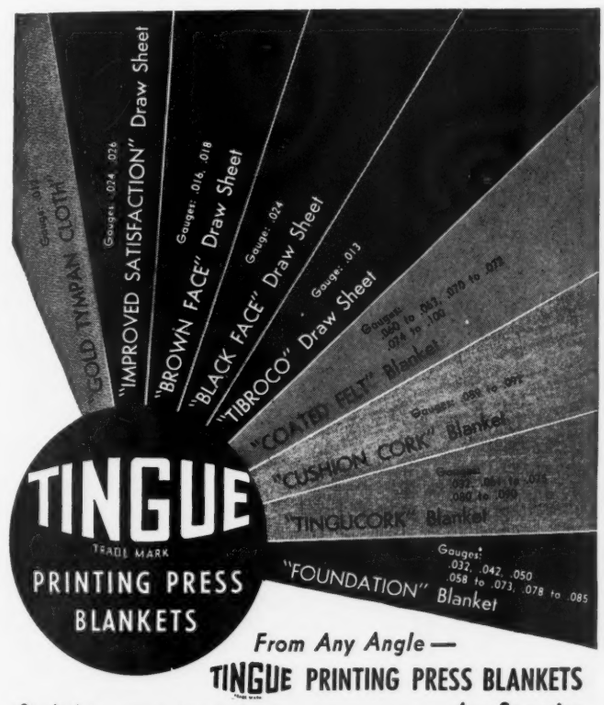
probability, a change had taken place in the temperature of the volume of the water used, and by proper adjustment of the water the original difficulty would have been overcome. Here is an instance where the craftsmanship and technology became hopelessly confused, to the detriment of both.

For no apparent reason it frequently happens that shear pins on the Autoplates begin to break with greater regularity than ever before. We have known of cases where the stereotyper or the house machinist attempted to cure this condition by installing new shear pins with a greater breaking area. While this results in fewer broken shear pins, it likewise creates greater danger to the safety of the machine and its operators. A better way is to look over the cylinder bearings. Probably these will be found to be receiving no lubrication because the oil hole has been stopped by metal dust. Another possible thing to do is to remove and clean the segment ring which may cause a drag on the cylinder and result in broken shear pins.

We know of other cases where hot spots have occurred in the plate due to improper cooling because of the accumulation of scale inside of the cylinder. In communities where water is hard or full of foreign substances, it is better to attack the problem by more frequent cleaning of the casting box or core and cylinder, rather than to attempt to overcome the scale deposit by a coating, such as zinc, on the inside of the cylinder. When this is done the coating creates additional insulation, making the cooling even less effective than before.

In the pressroom the web sometimes runs into a wrinkle as it leaves the former in the folder. This trouble may be overcome by resetting the nipping rollers. It is wrong to attempt to overcome this trouble by resetting the former and throwing it completely out of alignment.

Frequently, it is noticed that the papers do not lie on the delivery as neatly as they did the day before. The method sometimes used to overcome this difficulty is to readjust the side pans on those presses that have them or to reset the fan blades themselves, throwing the whole thing out of line. Actually, this condition can be cured more quickly and more



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surely by readjusting the folding rollers, which have either been thrown out of adjustment since the previous run or need resetting because they are handling a paper of a different size.

Many more instances of this nature could be cited to show that while technology and craftsmanship used in the proper places can jointly produce a desired result, there is danger in the application of one for the other, or in the choice of the wrong remedy, which only results in the defeat of the original intention.

I have shown instances where it is wrong to attack a problem from the technological angle when proper craftsmanship should be applied. Should it be determined definitely that the fault lies with the tools rather than with their use, that point should be made clear at once. The employer then will realize that it is up to him to do something about it. Where the mechanical executive's craftsmanship is definitely established, he should have no trouble in getting the cooperation of the publisher in supplying the technology.

The function of the manufacturer is to design and build the tools (the technology) which your publishers must furnish so that you may do your work in the most efficient manner. All builders of printing machinery today produce equipments which are designed for longer life, better printing quality and easier operation than ever before. All the brains and the skill in our industry are constantly at work to bring this about. Some may achieve these results in one way — and others in another way, but the aim is common to all.

The modern publisher must realize that good tools cost more money to produce than inferior tools, but he must also be convinced by now of the high price of cheapness. As a rule, one gets what he pays for. Frequently he gets less, but seldom, if ever does he get more. The good craftsman deserves the best tools obtainable.

In addition to this primary function, the machine builders today have another purpose — a sense of responsibility to the trade which they serve. Their skill and their experiences are always available to the publishers and to the workers in your craft, and they are at all times willing and anxious to give advice and counsel whenever it is asked for.

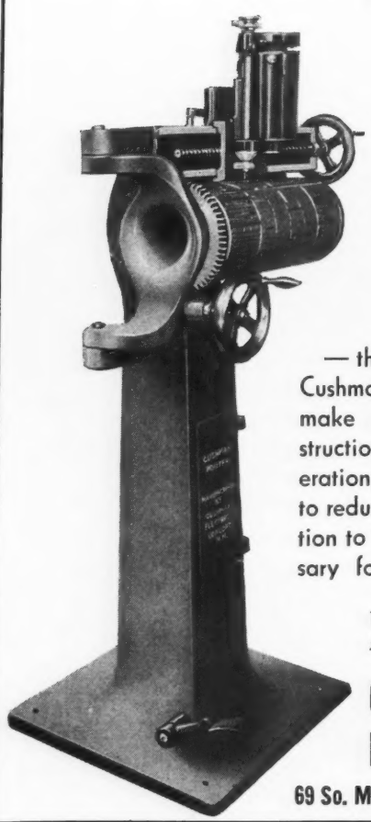
Each one of us — craftsmen, publishers and suppliers of machines and materials — has a different role to play in our profession. Each has a different function to perform but we are partners in the same enterprise. If one of us fails, the system breaks down. We must contribute in our individual ways to the common good of all. We must collaborate to produce harmony — a harmony which makes living worthwhile.

MOUNTING SYSTEMS

Continued from page 18

type plates." The various types of early "book blocks" were made in various heights, and during that time both the "pica" (12 point) and "small-pica" (11 point), thicknesses of stereotype and electrotype reproductions of book pages were made for patent unit blocks.

The outstanding development in patent base was covered by a patent issued April 24, 1866, to A. Case of New Haven, Connecticut. That patent marked a milestone in the history of printing-plate mounting materials, because it introduced the beginning of the sectional metal base system which has proved popular in the printing industry ever since. Mr. Case stated in his patent application that up to the time of his invention, patent blocks were made nearly to the size of the stereotype plates to be used on them, hence many different sizes of blocks were required in an ordinary printing office in order to accommodate the various sizes of printing plates. Obviously, that condition meant that the cost of numerous sets of blocks amounted to a large sum of money invested in printing plant equipment, and it was often a problem to find sufficient or convenient space to store the blocks when they were not in use.



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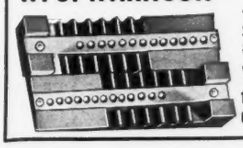
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The Case invention involved the use of type quads of the old-named sizes, such as: Pica, English, Great Primer, etc., none of them then being made on the American point system. However, the quads were made up approximately to size of the plate, and locks of the hook type were placed between the quads at two edges of the plate in such position that the plate could be readily locked onto the quad section of the metal sectional block. Thus came the first practical metal base, to supersede wood mounts, about 75 years ago.

What seems to be the first patent for a diagonally grooved metal base, was that issued July 9, 1872, to Robert P. Tickle, of London, England. That system, however, did not employ a mechanically-operated register hook so vital in the present diagonal grooved bases. But, even at that time the need of such a device was recognized, for on July 29, 1873, a patent for a mechanical hook was granted to Frederick Scholefield, of Chicago, Ill. Variations of the idea expressed in the Scholefield patent are still used today, although remarkable improvements have been made in register hooks and catches for modern plate-mounting systems.

The honeycomb type of metal base is by no means as "young" as many in the Graphic Art industry believe. More than fifty years ago, or July 9, 1889, the first patent for a honeycomb base system was issued to H. Fietsch, Jr. It was called a "Block for stereotype or electrotype plates." Like the first diagonal base, it did not incorporate a mechanical hook for clamping and registering the plates.

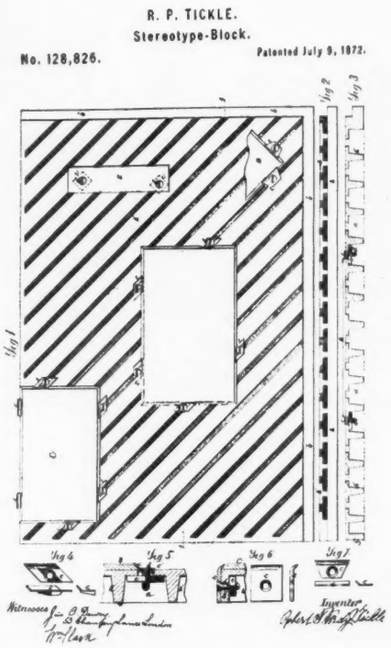


Fig. 3 — First patent for a diagonally grooved base was issued to Robert P. Tickle of London, Eng., in 1872. This system, however, did not include a mechanical hook.

During the past half century, many other patents have been issued for mounting and registering equipment of all sorts, but very few of these inventions have ever reached the printer, because of the great expense and other difficulties encountered in getting the devices on the market. On this point, credit is certainly due all the manufacturers of printing equipment who have invested large sums of money, and spent years in developing and perfecting the excellent machines and related equipment now to be seen in modern printing and publishing plants throughout the country.

From this brief review, it is evident that printers and supply men long ago recognized the deficiencies of wood as a base for printing plates, and many persons and firms have spent a great deal of time and money in the development of "better-than-wood" plate-mounting systems.

Announces Chairmen

Albert Wroten, president of the Baltimore Club of Printing House Craftsmen, has named Harry M. Sachs, Chief of the Duplicating Bureau of Baltimore City, general chairman of the 1941 committee for the convention of the International Association of Printing House Craftsmen, with Allan Robinson, Principal of the Ottmar Mergenthaler School of Printing, and Martin A. Fischer, superintendent, Schneidereith & Sons, as co-chairmen.

Advertiser's Index — November, 1940

American Publishers Supply 38

American Type Founders 21-32
Agency: G. M. Basford Co., New York City

Atlantic Zinc Works, The 33

Ad Service Company 43

Booth, The E. A., Rubber Company 29

Breuer Electric Manufacturing Company 40
Agency: Carl I. Henrikson, Advertising, Chicago, Ill.

Burgess Cellulose Company 28
Agency: Almon Brooks Wilder, Inc., Chicago, Ill.

Certified Dry Mat Corporation 40
Agency: The H. P. Boynton Advertising Agency, Cleveland, Ohio

Challenge Machinery Company, The 31
Agency: Simmonds & Simmonds, Inc., Chicago, Ill.

Champion Paper & Fibre Company, The 25

Cline Electric Manufacturing Company 43
Agency: Almon Brooks Wilder, Inc., Chicago, Ill.

Cromwell Paper Company, The 42
Agency: Roche, Williams & Cunnyngham, Inc., Chicago, Ill.

Cushman Electric Company 42

Duplex Printing Press Company, The 43

Eastern Newspaper Supply 41

Goss Printing Press Company, The 4
Agency: Simmonds & Simmonds, Inc., Chicago, Ill.

Hamilton Manufacturing Company 36

Hammond Machinery Builders, Inc 23-37

Harris-Seybold-Potter Company 6
Agency: Baker and Baker & Associates, Inc., Cleveland, Ohio

Herrick, William C., Ink Company 42

Imperial Type Metal Company 30

Inter-Lino Tool Company, The 43

Intertype Corporation ..... **Outside Back Cover**
Agency: Fred Glen Small, New York, N. Y.

Kelly, E. J., Company 43
Agency: Almon Brooks Wilder, Inc., Chicago, Ill.

Kimble Electric Company 39
Agency: Kirkgasser-Drew, Inc., Chicago, Ill.

Klean-O-Mat Corporation 43

Lanston Monotype Machine Company 15

Linotype Parts Company 29

Logan Engineering Company 35
Agency: Advertising Producers-Associated, Chicago, Ill.

Ludlow Typograph Company 3

Mergenthaler Linotype Company ..... **Inside Front Cover**
Agency: Kenyon & Eckhardt, Inc., New York, N. Y.

Milwaukee Saw Trimmer Corporation 27

Monomelt Company 19
Agency: Olmsted-Hewitt, Inc., Minneapolis, Minn.

Montgomery & Bacon 40

Reid, William, & Company 43

Rivett Lathe & Grinder, Inc 40

Rouse, H. B., & Company 43
Agency: Clifton Kirkpatrick, Chicago, Ill.

Sinclair & Valentine Company 41

Sovereign Oil Company 43

Sta-Hi Corporation 1

Teletypesetter Corporation 27
Agency: Newell-Emmett Company, Inc., New York, N. Y.

Tingue Brown & Company 41
Agency: The Overhague Advertising Agency, New York, N. Y.

Vandercook & Sons ..... **Inside Back Cover**
Agency: Clifton Kirkpatrick, Chicago, Ill.

Warnock, W. S., Company 43

Wetter Numbering Machine Company 39
Agency: O. S. Tyson & Company, Inc., New York, N. Y.

Wood Flong Corporation 35
Agency: St. George Advertising Agency, New York, N. Y.

Wood Newspaper Machinery Corporation 17
Agency: Fred Glen Small, New York, N. Y.

free TECHNICAL INFORMATION AND LITERATURE FOR *you*

Circle the numbers on the convenient postage-paid return card, supply your name, title and company address and mail — we do the rest. Manufacturer or supplier will send you information or literature about equipment or supplies advertised in this issue. This card saves you time and postage — Keep informed — No obligation.

Pressroom

1 **PAPER** — Champion Paper and Fibre Co. says, "Thousands find extra value in Champion paper." Send for samples of Champion papers for advertising.

2 **ATF OFFSET GUNS** — "Protection from offset to speed up production on every job."

3 **OFFSET PRESS** — Harris-Seybold-Potter Company says "Widen your profitable market by printing a job by the method for which it is best adapted." Send for details on solving your lithographic problems.

4 **INK** — Sinclair & Valentine Co. will send you Literature on "Zephyr Blacks." Ask for it.

5 **AUTOPASTER** — Wood Newspaper Corp's. Autopasters have enviable service records. Get more information on them.

6 **PRESS BLANKETS** — Tingue Brown & Co. will send you prices and information on press blankets for various types of service.

7 **CLIPPER PRESS** — ATF will send you particulars on "The press the pressmen OK'd." Get details now.

8 **LUBRICATION** — "There is a Pulsolator system for automatically lubricating every size and type of press." Send for Bulletin B-30

9 **GOSS** — points to the 348 Goss High Speed Anti-Friction Units in newspapers throughout the world, "proof of leadership." Get data on Goss equipment.

Composing Room

10 **HAMMOND SAWS** — Get information on "the saw that is the result of 60 years of progress." Circle this number.

11 **SLOW SPEED ASSEMBLER** — Linotype Parts Co. asks you to get details on its device to modernize older Linotypes and Intertypes.

12 **CUT CEMENT** — Let the Booth Rubber Co. send you information about Zink Cut Cement, "A simple means to mount cuts on bases."

13 **COMPOSING ROOM EQUIPMENT** — Challenge Machinery Co. will show you what it means to "Economize with Challenge Equipment."

14 **ROUTER** — Cushman Electric Co. says that its router will "Reduce current consumption ⅓ that of ordinary routers." Get particulars by sending post card.

15 **COMPOSING ROOM PLANS** — Get your copy of "How Your Composing Room Can Pay Dividends." Circle this number on the post card.

16 **MAGAZINE SHIFT** — Intertype says that the new Autoshift will "Shift from one magazine position to an adjacent position in less than 2½ seconds."

17 **TELETYPESETTER** — offers a booklet that shows "how to save time and money and get more production on your composing machine."

PLEASE FILL OUT THIS CARD CAREFULLY

PRINTING EQUIPMENT Engineer — November
1276 West Third Street, Cleveland, Ohio.

Without obligation please have the manufacturers send me literature or information circled below. (These numbers correspond to numbers on descriptive paragraphs).

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35

NAME..... TITLE..... DEPT.....

FIRM NAME.....

STREET..... CITY..... STATE.....

Use this Free Service —

KEEP UP-TO-DATE ON EQUIPMENT AND SUPPLIES

18 **LINOTYPE** — asks you to get complete data on the "slug-caster which will give a production ratio of 82.3%".

19 **SAW-TRIMMER** — The Milwaukee Saw Trimmer Corp. offers to send you details on G&C Saw Trimmers. "You can save by modernizing with G&C Precision-built equipment."

20 **TYPE METAL** — Imperial Type Metal Co. says if you follow its advice in "Everyday Problems of Type Metal Users and Their Solutions" you'll have information to keep you from "getting called on the carpet."

21 **MONOTYPE** — Offers instructive booklet on Monotype Automatic Quadding and Centering. Also details on the Monotype 16 Point Program.

22 **NUMBERING MACHINES**— For numbering on Rotary Presses, Wetter asks you to let them suggest ways to lower your numbering costs. Get information by circling this number.

23 **MONOMELT** — Will send information on Monomelt Metal Melting systems, and Plane-O-Plate, "The flat plate shaver with the advantages of rotary cutting."

24 **PROOF PRESSES** — Vandercook & Sons will send you particulars on their proof presses and proving machines. Get particulars by sending post card with this number circled.

25 **DETAILS AND SPECIMENS** — of Ludlow typefaces will be sent you by The Ludlow Typograph Co. Get details also of new Ludlow equipment.

Stereotype Dept.

26 **EASYKASTER** — "There is no 'stop and go' with a Hammond EasyKaster '8'." Hammond will gladly send you full description and prices.

27 **MASTER FORMER** — Sta-Hi says its Master Former helps produce "Better quality printing and lower production costs." Descriptive booklet will be sent at your request.

28 **DRY MAT**—Wood Flong says "For deep molds and clean plates — try Wood Mats." Circle this number for a sample lot.

29 **CATALOG**—American Publishers Supply offers a catalog of stereotype department equipment and supplies. Circle this number on the post card.

30 **DRY MAT**—Burgess will send you test samples of Burgess Chrome Mats.

31 **STEREOTYPE SUPPLIES** — Eastern Newspaper Supply offers complete catalog of its line of Stereotype Supplies.

32 **DRY MAT** — Certified says, "Certified Mats help to keep the pace in the press time rush. Send for samples.

Miscellaneous

33 **ELECTRIC MOTORS**—Kimble Electric Co. offers a booklet on motors built for the printing industry.

34 **AIR FILTERING** — Logan Engineering Co. offers Bulletin 939 telling how your air lines on feeders will be more efficient if they are kept free of dirt and moisture.

35 **ZINC** — Atlantic Zinc Works says "Zomo-Zinc and A-Z Alloy were developed to meet demand for better materials to maintain leadership of photoengraving industry." Send for booklet.

Postage Will be Paid by Addressee

No Postage Stamp Necessary If Mailed in the United States

BUSINESS REPLY CARD

FIRST CLASS PERMIT NO. 2255 (SEC. 510 P. L. & R.) CLEVELAND, OHIO

PRINTING EQUIPMENT *Engineer*

1276 West 3rd Street

Cleveland, Ohio

LEARN THE *Easiest* WAY TO MAKE

TRANSPARENT IMPRESSIONS

The results of extensive experimenting in producing transparent impressions, for use in making lithographic plates and rotogravure cylinders, are yours for the asking.

Hundreds of tests have been made. Revolutionary developments have reduced the time of production and increased the reproductive quality of the proofs.

Information on latest discoveries, and an interesting booklet, which illustrates and describes every step in the actual printing of transparencies, will be sent at your request and without obligation to you. Write for your copy today.

FREE!

VALUABLE REFERENCE

Vandercook-Hacker Illustrated Price List. An encyclopedia of modern proving and premake-ready equipment. Write now.

VANDERCOOK & SONS

Main Office and Factory
904 North Kilpatrick Ave., Chicago

Eastern Branch
214 East 45th St., New York City

Canada: SEARS LIMITED, Toronto, Montreal, Winnipeg, Vancouver

CONFIDENCE

IN THE FUTURE OF AMERICA

The J. W. Ford Company in Cincinnati steps ahead with Universal Intertypes and more new type faces

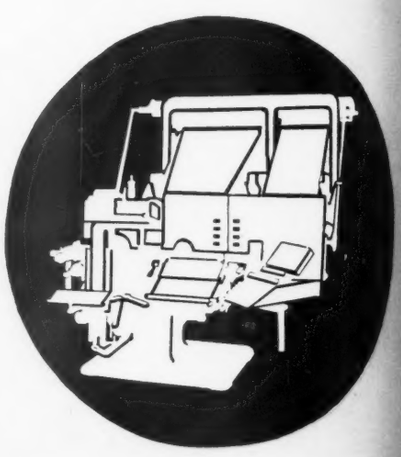
★ Continuing their policy of complete confidence, both in America and sound American business which supports them, THE J. W. FORD COMPANY, advertising typographers of Cincinnati, through their purchase of the latest in Intertype equipment indicate a degree of confidence in the future of America that is both impressive and stimulating.

★ This confidence on the part of THE J. W. FORD COMPANY rests upon a sturdy foundation of careful thinking and planning; for in choosing Universal Intertypes this progressive firm has prepared for *future changes* in its requirements, in addition to installing the latest and most flexible composing room equipment for meeting the strenuous needs of today.

★ That is one of the new and exclusive features of the UNIVERSAL INTERTYPE . . . convertibility from one type of machine into another, even from mixer into non-mixer or vice versa . . . never before achieved in all the history of line composing machine development. Other equally important features of these machines are worthy of your most careful consideration.

Two Eight-Magazine Universal Intertypes

★ Included in the new equipment purchased by The J. W. Ford Company are two of the latest Streamlined Universal Intertype Mixers . . . one Model F and one Model G. Each machine carries eight magazines and each is equipped with the Intertype Automatic Quadding and Centering Device, Six-Mold Disk, and the Mohr Intertype Saw. Some of the matrix families included in this installation are the Intertype Baskerville, Beton, Bodoni, Caslon, Cairo, Century, Cheltenham, Cloister, Egmont, Ideal, Futura, Franklin Gothic, Garamond, Kennerley, Rex, Scotch, and Vogue.



Have you ever noticed what a large percentage of advertising typographers are choosing Intertype machines? There's a good reason. Those gentlemen make their livings from type composition . . . AND THEY KNOW TYPESETTING MACHINES!

STEP AHEAD with the UNIVERSAL INTERTYPE

CAIRO FAMILY